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UNINCORPORATED SAN JOAQUIN COUNTY BIKEWAY PLAN



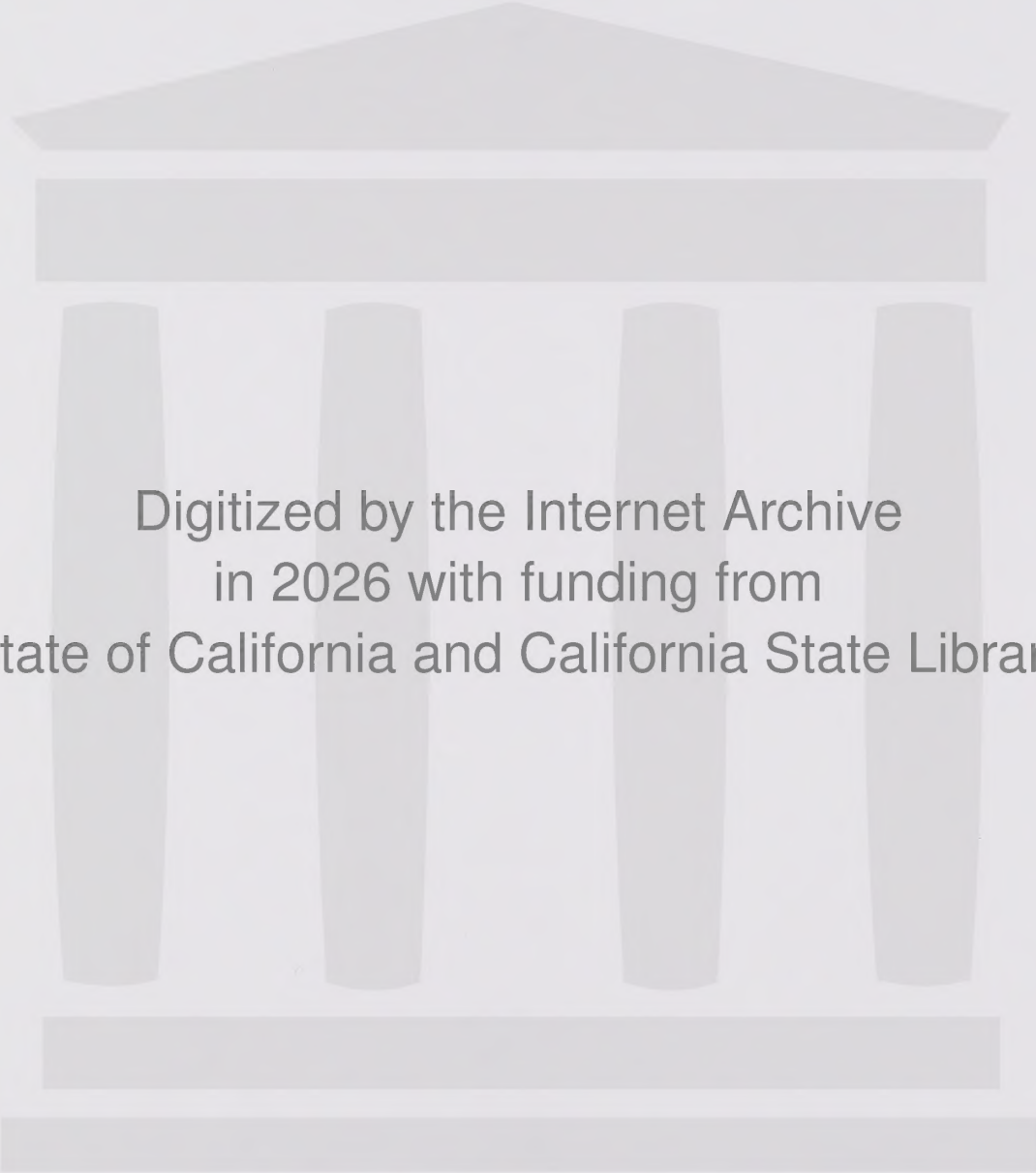
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I. INTRODUCTION

The San Joaquin County Department of Public Works (SJCDPW) prepared the Unincorporated San Joaquin County Bikeway Plan (USJCBP) with assistance from Fehr & Peers Associates, Inc. It provides a blueprint for developing a bikeway system that includes both on-street as well as support facilities and programs throughout the unincorporated County. In addition, the plan complements bikeway plans prepared by the San Joaquin Council of Governments (SJCOG) and the incorporated cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, and Tracy by identifying key connections to existing or planned bikeway facilities in these jurisdictions.

STUDY AREA

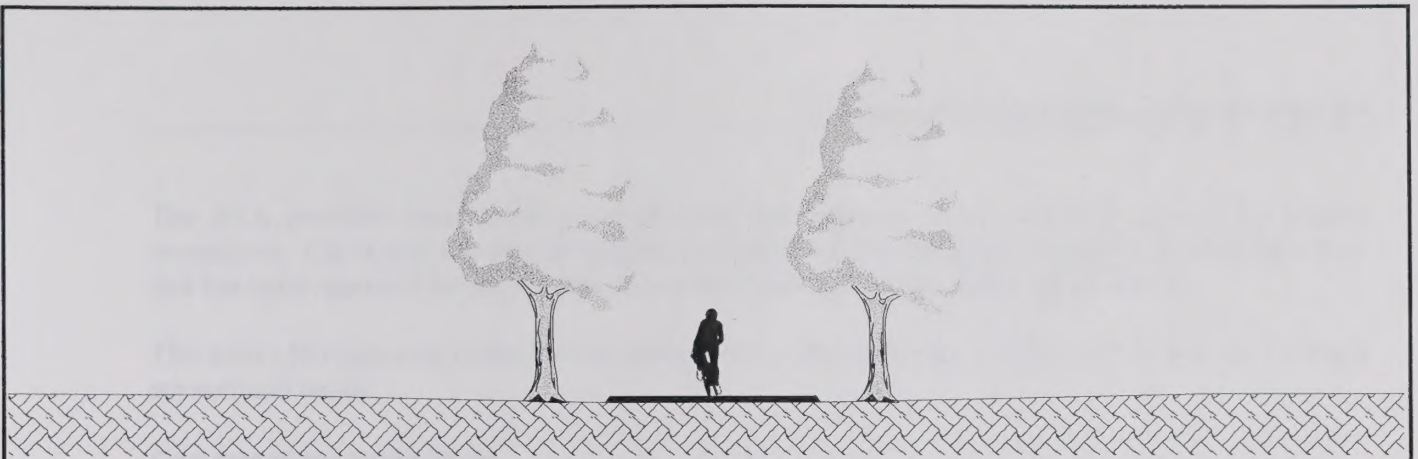
The study area includes the unincorporated portion of San Joaquin County. Most of the County can be characterized as having level terrain with some rolling terrain in the eastern County, which stretches to the beginning of the Sierra Nevada. The western area of the County includes the San Joaquin Delta and most of the urban population in the Cities of Lodi, Lathrop, Manteca, Stockton, and Tracy. Smaller communities such as the incorporated Cities of Escalon and Ripon exist on the southeastern side of the County where agricultural uses are predominant. Most areas of the County are accessible by bicycle because of the relatively flat topography and an extensive unincorporated County road system that, in many cases, has paved roadway shoulders.

PLANNING AND DESIGN STANDARDS

Bikeway planning and design in California typically rely on the guidelines and design standards established by the California Department of Transportation (Caltrans) as documented in "Chapter 1000: Bikeway Planning and Design" contained in the Highway Design Manual, Fifth Edition, California Department of Transportation, February 1, 2001. Chapter 1000 identifies specific design standards for various conditions and the relationship of bikeways to roadways. The Caltrans standards provide for three distinct types of bikeway facilities as generally described in Figure 1.

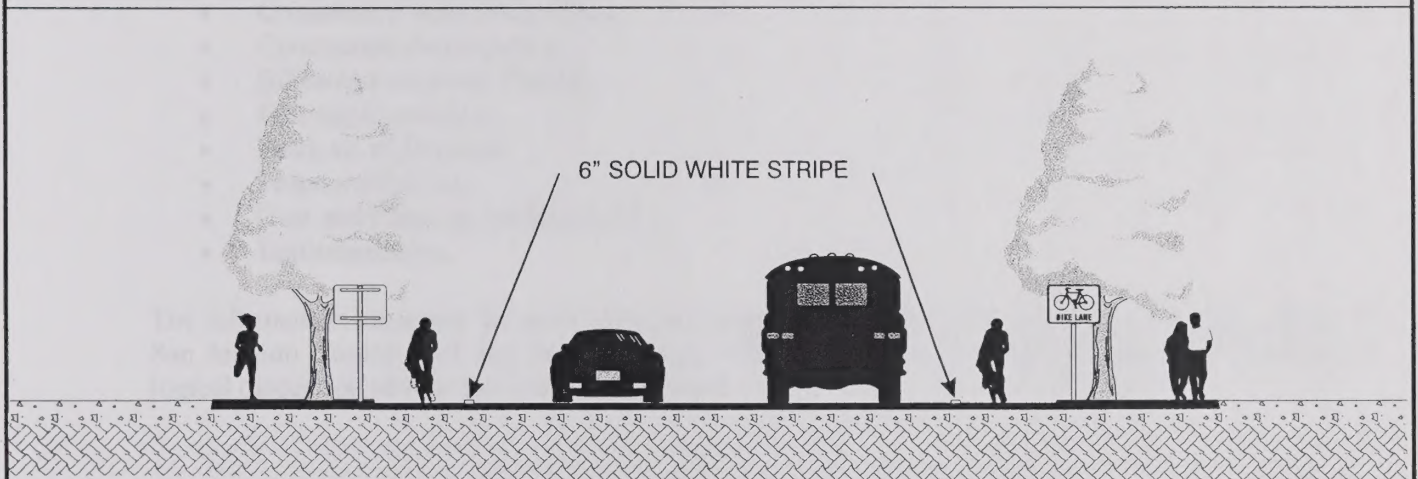
Other important policy documents that affect bikeway planning and design include the California Streets and Highways Code and Vehicle Code (CVC) as well as the California Bicycle Transportation Act (BTA 1994). The BTA re-codifies the Streets and Highways Code (Chapter 517) and requires Caltrans to take certain actions that further promote bicycle programs. A key component of this act is the requirement for cities and counties to complete bikeway plans containing the following eleven elements as a condition of applying for state funding:

- 1) Estimated number of existing and future bicycle commuters;
- 2) Land use and population density;
- 3) Existing and proposed bikeways;
- 4) Existing and proposed bicycle parking facilities;
- 5) Existing and proposed multi-modal connections;
- 6) Existing and proposed facilities for changing and storing clothes and equipment;
- 7) Bicycle safety and education programs;
- 8) Citizen and community participation;
- 9) Consistency with transportation, air quality, and energy plans;
- 10) Project descriptions and priority listings; and
- 11) Past expenditures and future financial needs.



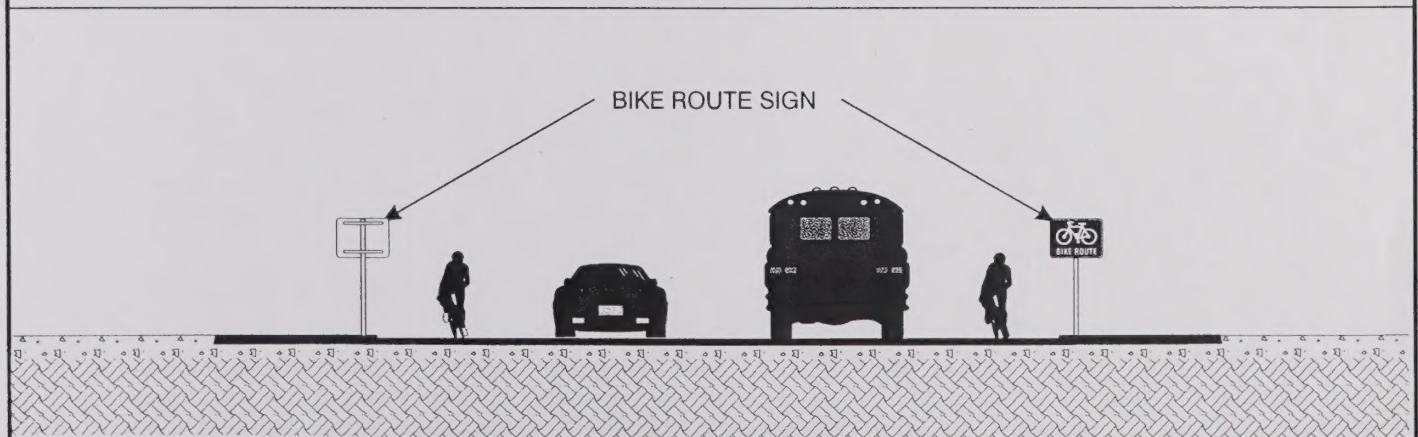
CLASS I BIKEWAY (Bike Path)

Provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians with crossflow minimized.



CLASS II BIKEWAY (Bike Lane)

Provides a striped lane for one-way bike travel on a street or highway.



CLASS III BIKEWAY (Bike Route)

Provides for shared use with pedestrian or motor vehicle traffic.

FIGURE 1

GENERAL BIKEWAY CLASSIFICATIONS

The BTA provides State funding for projects that improve safety and convenience for bicycle commuters. Cities and counties are eligible to apply for BTA funds after adoption of a Bikeway Plan that has been approved by the appropriate transportation planning agency and Caltrans.

This plan addresses each of the eleven components in the remaining sections of this document, which are outlined below.

ORGANIZATION OF THE PLAN

The Bikeway Plan includes the following components:

- Consistency with Other Plans;
- Community Participation;
- Bikeway Goals and Policies;
- Existing Conditions;
- Analysis of Demand;
- Proposed System;
- Cost and Funding Analysis; and
- Implementation.

The information presented for each of these components is the result of the data collection efforts of San Joaquin County staff and the consultant. The components have been organized to facilitate a logical discussion of how this plan was prepared.

II. CONSISTENCY WITH OTHER PLANS

Many plans and programs that address bicycle facilities have already been adopted throughout the San Joaquin County region. At issue is how to integrate the public input and technical recommendations from this planning effort with the many plans and programs already in place. At the local level, the plan strives to fill in, extend or link existing bicycle plans and facilities throughout San Joaquin County. With regard to larger geographic areas, the plan has developed recommendations that consider the proposed improvements in adjacent Counties. In the largest policy sense, the plan proposes to improve mobility, relieve congestion, and improve air quality across the County.

LOCAL BICYCLE PLANS

To create a convenient and connected bicycle system, improvements across jurisdictional boundaries must blend together without interruption. The Cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, and Tracy either have bicycle plans in place or are preparing bicycle plans. The purpose of the Unincorporated San Joaquin County Bikeway Plan is not to duplicate recent planning efforts, but to incorporate and coordinate the recommendations of the local plans to provide connectivity to the routes proposed for the unincorporated areas.

REGIONAL PLANS AND PROGRAMS

San Joaquin Valley Unified Air Pollution Control District Air Quality Attainment Plan

Air quality in the San Joaquin Valley violates Federal and State health standards. Under State and Federal requirements, the San Joaquin Valley is mandated to implement transportation control measures (TCMs) and other mobile source control measures to significantly decrease emissions. Bicycle programs are one of nine TCMs recommended in the San Joaquin County Transportation Control Measures Program.

Bicycle programs are also cited as a TCM in the 1990 Federal Clean Air Act Amendments, which call for "...programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas..." The National Bicycling and Walking Study, 1994 found that "Experience demonstrates that funded staffed bicycle programs able to provide bicycle transport infrastructure will boost levels of bicycling.

Congestion Management Program

The Congestion Management Program (CMP) is the State Legislature's effort to reduce congestion on California's highways and roads. The overall objective of the CMP legislation is to plan for land use development in tandem with the necessary transportation improvements. One element of the CMP is Transportation Demand Management (TDM). The TDM element incorporates transportation control measures that have been identified in the 1994 Transportation Control Measure Program, which is part of the San Joaquin Valley Unified Air Pollution Control District Air Quality Attainment Plan. These transportation control measures promote alternative methods of transportation designed to reduce trips and improve air quality. This Plan is consistent with the CMP and TDM element, as bicycles are an alternative mode that can reduce the number of vehicle trips.

San Joaquin County General Plan 2010

The following information, objectives and policies for bicycles are included in the County's 2010 General Plan.

The County's flat terrain, extensive rural road system, recreational opportunities, and mild weather are conducive to bicycle travel for transport as well as recreation. Land planning that emphasizes jobs and service areas near housing can promote the bicycle's role as an alternative to the automobile. All roadways, except freeways, may be used by bicycles. This must be recognized and the safety of bicycles on the roadways considered. Roadway widths should be adequate to accommodate bicycles.

Objective: 1. To provide a countywide system of bicycle facilities for safe and convenient transportation and recreation.

- Policies:
1. The bike route system shall:
 - (a) provide for inter-and intra-county bicycle circulation;
 - (b) connect residential areas with commercial areas, employment centers, educational facilities, local and regional recreational facilities, and other major attractions;
 - (c) interface with city bicycle routes;
 - (d) be constructed to acceptable standards; and
 - (e) be physically separated from automobile traffic when warranted because of traffic or safety concerns.
 2. New development shall include appropriate bicycle facilities:
 - (a) Adequate bicycle access shall be provided;
 - (b) Off-street shared pedestrian/bicycle paths shall be considered in large developments;
 - (c) Bicycle parking and/or storage facilities shall be provided in the following areas: convenience, neighborhood, and community commercial; employment centers; educational facilities; recreation facilities; and park and ride lots.
 3. Bicycle use shall be included in a trail system.
 4. Roads planned as part of the bicycle route system shall:
 - (a) be constructed with bicycle safety considered;
 - (b) have bridges with adequate widths for bicycles;

- (c) have adequate width to accommodate bicycle travel without the necessity of traveling in a gutter or on an unimproved shoulder; and
- (d) have traffic sensors that respond to bicycles.

Regional Transportation Plan

The 2001 Regional Transportation Plan (RTP) was adopted by the SJCOG to comply with State and Federal requirements for a comprehensive and long-range transportation plan, and to comply with new RTP guidelines adopted by the California Transportation Commission (CTC) in December 1999. The Non-Motorized Action Element of the RTP includes the following goals, objectives, and policies related to bicycle planning:

Goal: To develop a countywide system of bicycle facilities that will provide a safe and convenient means of transportation for the user.

Objective: Support the improvement or expansion of bicycle facilities that can be used as alternatives to the automobile, emphasizing improvements to “primary facilities,” before more recreational type facilities.

Policies:

- Identify primary roadways for bicycle travel by preparing a Regional Bicycle Facilities Plan, updating the Bicycle Plan for San Joaquin County.
- Make primary roadways safer for bicyclists by improving to a 4-foot shoulder.
- Identify for local governments, the Federal, State and local funding sources and help them apply for these potential funds that can improve primary roadways.
- Identify and help local governments secure abandoned rights-of-way that can be converted to bicycle uses.
- Assist local governments in applying for federal and state funding for bicycle improvements.

Measure K Strategic Plan

On November 6, 1990, the voters of San Joaquin County passed the Measure K sales tax initiative. The Measure calls for a ½-cent countywide sales tax to be collected for 20 years, to pay for much-needed transportation projects throughout the County. Approximately \$20 million is collected annually of which approximately \$250,000 is earmarked for bicycle projects.

Regional Transit Systems Plan

The San Joaquin Regional Transit Systems Plan (SJRTSP) was adopted in October 1992. The SJRTSP's primary goal is to "Develop a Transit System for San Joaquin County which provides the transit opportunities and modes available to improve mobility." This plan is consistent with the following bicycle-related strategies to improve mobility:

"The integration of increased density developments and transit services which supports the walk-to transit and bike-to-transit trips;" and

"Local support for all alternative modes including transit, rideshare, vanpools, bicycling and telecommuting."

PLANS FOR OTHER REGIONS

In many instances, bikeways between San Joaquin County and its neighboring counties are just as important as those within the communities. Currently, bicycle commuters use corridors between the Southeast County and Stanislaus County and between the North County and Sacramento County.

The plans consulted from neighboring Counties include:

- 2010 Sacramento City/County Bicycle Master Plan;
- Alameda County Master Bicycle Plan;
- Stanislaus Non-Motorized Area wide Plan;
- Calaveras County Bikeway Plan Update;
- Countywide Bike Plan for Contra Costa County;
- East Bay Regional Park District Master Plan; and
- City of Oakdale Bike and Trails Master Plan

Recommended improvements in these recent plans have been considered in the development of this plan.

III. COMMUNITY PARTICIPATION

Community participation is an important component of this plan. Public input was specifically sought regarding existing bicycling conditions, potential roadways for improvement to accommodate bicycles, and the type of support facilities or programs needed to improve bicycling in unincorporated San Joaquin County. The community participation effort included input from a needs and attitude survey, an oversight committee (OSC), and two sets of public workshops.

NEEDS AND ATTITUDE SURVEY

As part of this study, a needs and attitude survey was conducted to obtain input from the general public and bicyclists. Survey respondents were asked about their bicycling activity (i.e., commuter, recreational, etc.), the frequency and maximum distance of bicycling trips, which lane of the road they use, major destination, and problem areas.

A total of 800 survey forms were distributed throughout San Joaquin County during the week of October 22, 1997. Five hundred survey forms were distributed at bicycle shops in Lodi, Manteca, Stockton, and Tracy, at the Micke Grove Regional Park and Zoo, at San Joaquin Delta Junior College and the University of the Pacific (UOP), and at regional shopping malls. Three hundred survey forms were mailed out to individuals on the San Joaquin Council of Governments' Commute Connection mailing list. A total of 141 surveys were returned for a response rate of 18 percent. A summary of survey questions and responses is provided in Appendix A. Key survey results are reported below:

- The most common type of bicycling reported is casual recreational riding (99 responses), followed by mountain biking (29 responses). A total of 44 respondents commute by bicycle with 22 regular bicycle commuters and 22 occasional bicycle commuters. Ten respondents were racing/touring bicyclists while another eight respondents were club bicyclists.¹
- The longest distances are traveled for recreational/exercise trips with a median distance of ten miles. The median work commute is 11 miles, but roughly half of these respondents reported a commute of less than five miles. The median number of miles for school commuters, comprised mostly of San Joaquin Delta Junior College and UOP students, is four miles. Errands and recreational/leisure trips were shorter, at a median of three miles and five and a half miles, respectively.
- When riding on rural roads with a gravel shoulder, a paved shoulder, and travel lanes, the majority (63 percent) of respondents use the paved shoulder. An equal number of respondents ride on the gravel shoulder and the inside of the travel lane (16 percent each). A small percentage report riding in the middle or far side of the travel lane (2 percent and 1 percent, respectively). The majority of bicyclists (64 percent) find their riding lane to be comfortable.
- The most commonly mentioned destinations for bicycling trips are schools, stores, and parks. Recreational activity destinations such as water passages and the Delta were also reported. Destinations were most heavily concentrated within the City of Stockton, along

¹ Total responses exceed 141 because respondents were allowed to select more than one category.

Pacific Avenue, followed by activity centers within the Cities of Lathrop, Manteca, Tracy, and Ripon.

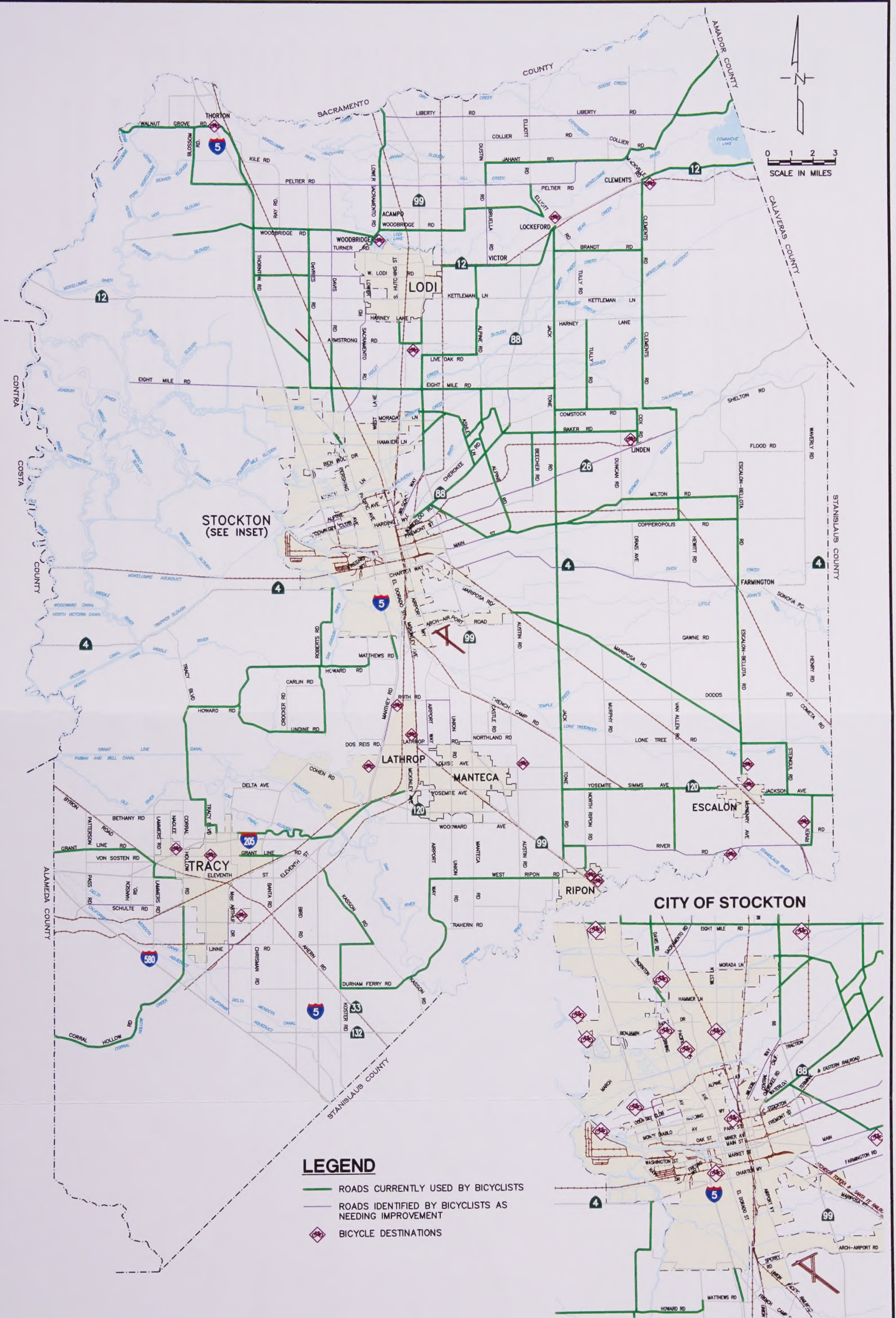
- The two most commonly cited problems were narrow shoulders and lack of bicycle lanes on streets. In the unincorporated areas of the County, these problems were identified on: Peltier Road, West Lodi Road, Davis Road, Alpine Road, Eleventh Street, and Lathrop Road.

In addition to the survey questions, respondents were asked to indicate on a map the routes they currently ride, destinations accessed, and locations where improvements are needed. Responses are illustrated on Figure 2. In addition to mapping the locations of where improvements are needed, survey respondents were asked to describe or indicate the type of problem associated with the needed improvement. A review of the comments received in regard to this question showed that 26 of 32 respondents cited no bike lanes or narrow shoulders as the problem.

The survey results described above were used to assist County staff and the OSC in the selection of specific routes included in the proposed system of bikeways for this plan. Respondent's information about where they ride and which routes need improvements was particularly useful as well as the median trip lengths for different types of recreational riders.

OVERSIGHT COMMITTEE

The OSC provided direct technical oversight of the plan participation. This group consisted of representatives from the San Joaquin County Department of Public Works, the San Joaquin County Community Development Department, the San Joaquin County Department of Parks and Recreation, the San Joaquin Council of Governments, the San Joaquin County Sheriff's Department, the City of Stockton, the City of Manteca, the City of Lodi, the City of Escalon, the City of Ripon, the City of Lathrop, the Stockton Bicycle Club, the Manteca Bicycle Club, and the Farm Bureau. The OSC was responsible for key components of the plan such as selection of the specific roadways that were evaluated in the plan and determination of the initial routes and their classification in the proposed system.



PUBLIC WORKSHOPS

As part of the community participation program for developing the 1998 USJCBP, two sets of public workshops were held. The first set of workshops focused on obtaining input from bicyclists and the general public regarding existing bicycle facilities in Unincorporated San Joaquin County. These workshops were held on November 12th and 13th, 1997. The second set of workshops focused on obtaining input regarding the proposed system of bikeways developed for this plan and were held on January 28th and 29th, 1998.

The November 12th workshop was held at Micke Grove Park in Lodi. This location was selected for the purpose of attracting north county residents while the November 13th workshop was held in Manteca at the Manteca Branch Library to attract south County residents. The same location in Manteca was used for the January 29th workshop while the January 28th workshop in Lodi was moved to the Lodi Library because of its more central location.

For both sets of workshops, approximately 300 flyers announcing the public workshops were distributed to the local media, local bike shops, and interested groups or individuals identified by San Joaquin County staff. This outreach program was successful in attracting about 15 to 20 members of the public at each workshop except for the first workshop in Lodi, where only three residents attended.

Summary of November Workshops

Both public workshops in November included a brief presentation about the purpose of the meeting, which was to solicit input from those in attendance regarding existing bikeway facilities in Unincorporated San Joaquin County. The presentation focused on an inventory of existing roadways, a review of available accident data, and a summary of survey results. Comments from the public at each workshop were directed at improving the maintenance of County roads used by bicyclists, adding bike racks to all County buses, connecting on-street bikeways to levees that are used for recreational purposes, and identifying specific roadways for inclusion in the existing conditions inventory for the bikeway plan.

Because of the low attendance at the November 12th workshop, additional input was solicited from the Stockton Bicycle Club. Maps of the existing conditions inventory were sent to Club members who were asked to identify existing roadways used for bicycling. This effort resulted in the addition of Collier Road, Mackville Road, Woodbridge Road, Armstrong Road, Shelton Road, Milton Road, Naglee Road, Von Sostan Road, Carlin Road, Crocker Road, and Undine Road to the existing conditions inventory.

The November workshop in Manteca was well attended and many comments were received about specific roadways that are used by bicyclists and recommendations about roadways that need improvement. The following comments were recorded at the second public workshop.

- Austin Road is used by bicyclists to reach Caswell Park on the Stanislaus River.
- Corral Hollow Road and Chrisman Road are good routes for bicyclists wanting to connect to the California Aqueduct bike trail.

- Union Road, Yosemite Avenue, Manthey Road, Canal Boulevard, MacArthur Drive, Lathrop Road, Valpico Road, Delta Avenue, and Cohen Road should be included in the existing conditions inventory because bicyclists use these existing roadways.

Other general comments consisted of support for bikeway connections between Manteca and Tracy as well as improved staging locations at the California Aqueduct bike trail. Many comments also focused on the constraints to riding in the unincorporated area of the County such as high vehicle speeds, the presence of agricultural and other large trucks, high traffic volumes, and poor shoulder condition.

Summary of January Workshops

The focus of the January workshops was to solicit public input regarding the proposed system of unincorporated County bikeways. About 15 members of the public attended each workshop and provided specific comments about routes in the proposed system. Many of the comments from the public helped to select between parallel routes. The San Joaquin County Department of Public Works staff considered the recommendations and final changes were made to the proposed system map (Figure 5) contained in this updated plan.

IV. GOALS, OBJECTIVES, AND POLICIES

The development of goals, objectives, and policies (GOPs) for this plan is intended to provide specific direction on the necessary actions involved in planning, designing, funding, and constructing bikeway facilities. The following information relies on an understanding of the relationship between the proposed bikeway system, key issues facing implementation of specific routes, and the requirements of local, state, and federal funding programs.

This section is organized by “topic areas” that relate to specific implementation issues. These topic areas include:

- Overall System;
- Future Development;
- Safety Education;
- Environmental Considerations; and
- Funding.

The purpose of organizing this section by topic area is to provide users such as local agency staff, developers, decision makers, and citizens with clear and concise policy direction on how to implement the bikeway facilities proposed in this plan. In many cases, geographic location affects implementation, but in other situations institutional arrangements or the preferences of local residents may play a greater role. Within each topic area addressed below, the reader will find an overall goal, measurable objective, and policies with specific action statements related to the development of bike facilities or programs.

OVERALL SYSTEM

The following goal and policy statements express the philosophy behind this plan and the proposed system. They stem from the County’s desire to provide citizens and visitors with a bikeway system that can accommodate recreational, commute, and other trip purposes.

Goal 1.0: Provide safe and efficient bikeways in San Joaquin County.

Objective: Construct bikeways identified in the Unincorporated San Joaquin County Bikeway Plan and provide for the maintenance of both existing and new facilities.

Policies

- 1.1 Prepare and maintain a bikeway plan that identifies existing and future needs, and provides specific recommendations for facilities and programs including adequate provisions for bicycle use and bikeways in all new developments.
- 1.2 Create a bikeway system that is cost-effective to construct and maintain; respects landowners, utilities, and special districts’ property rights; and minimizes the potential for conflicts with other types of vehicles and users.

- 1.3 Require all bikeways to conform to design standards contained in the Highway Design Manual, "Chapter 1000: Bikeway Planning and Design," Caltrans, February 1, 2001, unless otherwise established by San Joaquin County.
- 1.4 Update local roadway design standards, if necessary, to include sufficient pavement sections to accommodate bikeway facilities.
- 1.5 Consider a proposed route's importance in providing access to regional bikeway facilities when recommending local routes for implementation.
- 1.6 Coordinate with agencies such as Caltrans, Alameda County, Amador County, Calaveras County, Sacramento County, Solano County, Stanislaus County, and the cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, and Tracy regarding the implementation of the proposed system.
- 1.7 Provide connections to the proposed system from all existing and future transit facilities, stations, and terminals in San Joaquin County.

FUTURE DEVELOPMENT

As development occurs in San Joaquin County, individual projects should be reviewed to ensure consistency with the proposed system. In addition, development projects should adhere to the policy statements below regarding access, mobility, and support facilities for bicyclists.

Goal 2.0: Ensure that the transportation network within future development areas is accessible by bicycles and connects to routes identified in the proposed system.

Objective: Include bikeway facilities in all appropriate future development projects to facilitate on-site circulation for bicycle travel, on-site bicycle parking, and connections to the proposed system.

Policies

- 2.1 Require future development to construct bikeways as a condition of development along all roadways included in the proposed system.
- 2.2 Require future development, as a condition of development, to provide support facilities such as bicycle racks, personal lockers, and showers at appropriate locations such as parks, major recreational destinations, park-and-ride facilities, employment centers, schools, and commercial centers.
- 2.3 Consider landowner concerns when planning and acquiring off-street bikeway easements.
- 2.4 Meet the requirements of the Americans with Disabilities Act when constructing facilities contained in the proposed system, where applicable.

- 2.5 Whenever feasible, require future development to incorporate parks and schools as important destinations for bicyclists when designing circulation plans for subdivisions and other developments.

SAFETY EDUCATION

Safety education is an important aspect of increasing bicycle use. The following goals and policies are intended to improve the public's knowledge of how to safely use bikeways.

Goal 3.0: Improve bicycling conditions in San Joaquin County by reducing accidents and increasing the number of bikeway system users.

Objective: Educate and inform all residents and visitors of San Joaquin County about how to use bikeway facilities safely.

Policies

- 3.1 Incorporate standard signing and traffic controls as established by Caltrans to ensure a high level of safety for the bicyclist and motorist.
- 3.2 Use the California Statewide Integrated Traffic Records System (SWITRS) accident data to monitor bicycle-related accident levels annually, and target a 10 percent reduction on a per capita basis over the next twenty (20) years.
- 3.3 Support local law enforcement agencies and local school districts to cooperatively develop a comprehensive bicycle education program that is taught to all school children in San Joaquin County.

ENVIRONMENTAL CONSIDERATIONS

Bikeway facilities usually benefit the environment because their use reduces demand for motorized travel. Nevertheless, the construction of specific facilities may adversely affect the physical environment. The following goal and policy statements have been developed to avoid and minimize potential impacts to the environment.

Goal 4.0: Avoid adverse environmental impacts associated with the implementation of the proposed system.

Objective: Mitigate potentially significant impacts to a level of less than significant.

Policies

- 4.1 Conduct detailed environmental review of individual projects as they advance to the implementation stage of development.
- 4.2 Avoid areas of sensitive habitats for plants and wildlife when constructing facilities contained in the proposed system.

- 4.3 Solicit and consider community input in the design and location of bikeway facilities.
- 4.4 Consider the effect on other transportation facilities such as travel lane widths, turn lanes, and on-street parking when planning and designing on-street bikeways.

FUNDING

To obtain the funding required to implement the proposed system, San Joaquin County must take advantage of funding sources at the state and federal level. It will also require a commitment of local funding.

Goal 5.0: Acquire sufficient funding to construct the proposed system by 2025.

Objective: Maximize the amount of local, state, and federal funding for bikeway facilities.

Policies

- 5.1 Maintain current information regarding regional, state, and federal funding programs for bikeway facilities along with specific funding requirements and deadlines.
- 5.2 Prepare joint grant applications with other local and regional agencies for state and federal funds, as appropriate.

BICYCLING AND MULTI-MODAL CONNECTIONS

To encourage bicycling and a healthy plan should include connections to other transportation modes of San Joaquin County, and it should consider connections to other forms of travel such as public transit and private automobiles. The goals of policies related to multi-modal transportation is discussed below.

Regional Connections

San Joaquin County is bordered by Alameda County, Alameda County, Colusa County, Contra Costa County, Sacramento County, and Stanislaus County. State Routes 4, 12, 16, 20, and 120 all provide bicycle accessible regional connections to these counties and their urban cores. While conducting field visits during the planning and design inventory, it was observed that bicycle riders used State Routes 4, 12, and 20. According to the Southern Bicycle Club, SR 4 and 12 are popular routes for club rides because of the available connections to recreational destinations such as New Orleans, Camanche, New Orleans, and Pismo Beach.

V. EXISTING CONDITIONS

This summary of existing conditions describes the current status of bikeway facilities in unincorporated San Joaquin County. The discussion focuses on existing bikeways, regional and multi-modal connections, bike support facilities and programs, and projects that have been approved for funding and construction.

EXISTING BIKEWAYS

Existing bikeway facilities are limited in unincorporated San Joaquin County due to insufficient funding for the construction of major bikeway projects. San Joaquin County relies primarily on programs such as the State's Local Transportation Fund (LTF) and local Measure K funds to construct bikeway projects. However, much of the LTF funding has been dedicated to other non-motorized improvements such as needed pedestrian facilities.

In FY 1999/2000, the COG Board awarded approximately \$248,000 in Measure K competitive funds to support bicycle projects and programs. The Board modified the policies to emphasize and reward bicycle capital projects over bicycle planning programs. The policies also expanded the cycle to a 4-year period as a way of increasing overall fund availability. The most recent Measure K competitive bicycle funding cycle resulted in funding awards for the following bike projects:

- Calaveras River bike path extension;
- Stanislaus River bike/pedestrian bridge and path;
- Century Boulevard (in Lodi) bike path between Stockton and Church Streets;
- Escalon High School bike linkage project
- Lower Sacramento Road bike lanes between Turner Road and Harney Lane
- Lower Sacramento Road bicycle lane; and
- DeVries Road bicycle lane.

REGIONAL AND MULTI-MODAL CONNECTIONS

To encourage bicycle use, a bikeway plan should contain connections to other communities outside of San Joaquin County, and it should contain connections to other forms of travel such as public transit at transfer locations. The extent of existing regional and multi-modal connections is discussed below.

Regional Connections

San Joaquin County is bordered by Alameda County, Amador County, Calaveras County, Contra Costa County, Sacramento County, and Stanislaus County. State Routes 4, 12, 26, 88 and 120 all provide bicycle accessible regional connections to these counties and their urban areas. While conducting field visits during the existing conditions inventory, it was observed that bicycle clubs used State Routes 4, 12, and 26. According to the Stockton Bicycle Club, SR 4 and 12 are popular routes for club rides because of the available connections to recreational destinations such as New Melones, Camanche, New Hogan, and Pardee Reservoirs.

Multi-Modal Connections

Multi-modal facilities are places where individuals can connect/transfer to another mode of travel, such as bus, rail, bicycle, automobile, vanpool, and walking, in route to their destinations. These facilities are essential to bicycling because they enable riders to access public transit and other travel modes in situations where roadway obstacles might prevent continuous bicycle travel.

The San Joaquin County Regional Transit District (RTD) has mounted exterior bicycle racks on all fixed route buses on Stockton Metropolitan Area Regional Transit (SMART). By allowing bikes on board SMART buses, an intermodal link has been created at both ends of a transit trip, which thereby increases the range of service to passengers located outside of walking distance to transit stops. However, the unincorporated County does not have any existing transit stops with bicycle parking or other multi-modal stations that accommodate bicycles.

SUPPORT FACILITIES

Support facilities are designed to accommodate and encourage the use of bicycles. This includes parking accommodations such as bicycle racks and lockers, and facilities for bicyclists to change clothes and clean up such as restrooms, showers and clothes lockers. In general, most major shopping areas, schools and parks throughout unincorporated San Joaquin County are equipped with bicycle racks. A map showing all of these locations was not created as part of this planning study because of the extensive time and effort it would require. Nevertheless, the County is committed to providing bicycle support facilities. As an example, under the San Joaquin Development Title, new commercial and industrial development with twenty (20) or more required parking spaces, need to provide a rack or other secure device for the purpose of storing or protecting bicycles from theft. Such devices are to be provided with a minimum capacity of one bicycle per twenty (20) required parking spaces and are to be located so as not to interfere with pedestrian or vehicular traffic. The SJRTD and Lodi Grapeline have installed bike rack on all local, intercity and interregional buses. This feature will improve multimodal transportation options available to citizens of San Joaquin County.

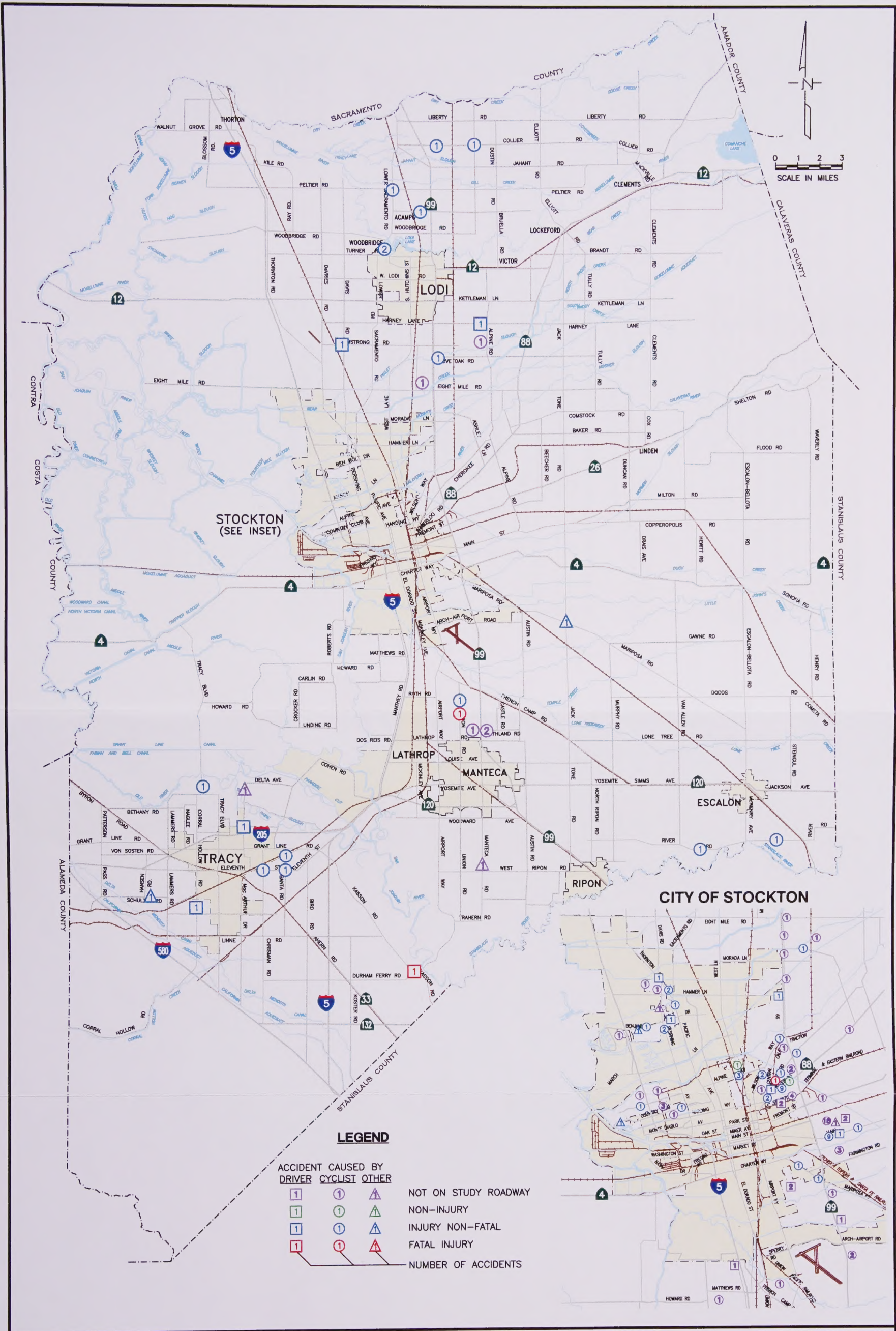
In regard to other support facilities such as restrooms, showers, and accommodations for changing and storing clothes, no public facilities of these types are operated by San Joaquin County for exclusive use by bicyclists. Public restrooms at the County parks identified on Figure 5 are the only support facilities operated by the County that are available to bicyclists. Bike lockers have been placed at eight park-and-ride locations (four in Stockton, one in Tracy, one in Lodi, one in Lathrop, and one in Escalon) that serve interregional bus passengers.

BICYCLE SAFETY

As part of this plan update, bicycle safety was evaluated. In particular, historical and existing bicycle accident data was reviewed to identify accident trends and locations, and local law enforcement agencies were contacted to determine the types of bicycle safety programs that are being conducted in the County.

Accident Data

During the preparation of the 1998 Draft USJCBP, the California Highway Patrol (CHP) provided bicycle accident data for the three-and-half year period from January 1994 through June 1997 from the Statewide Integrated Traffic Records System (SWITRS). Figure 3 shows the location, party at fault, severity, and number of bicycle accidents in unincorporated San Joaquin County based on this historical data. In addition, more recent accident data (1998 – 2001) was requested from SWITRS. This latest accident information is shown in tabular form in Table 1.



A detailed review of accident data was conducted from the clusters of accidents east of Stockton in the vicinity of Cherokee Road and Waterloo Road and in the vicinity of Main Street. In most of the accidents in these two clusters, the bicyclist was at fault. Interestingly, the age of the bicyclist tended to be under 16 years for accidents that occurred in neighborhood areas while the bicyclists involved in accidents on major roadways such as Cherokee Road or Waterloo Road were generally older (i.e., 25 to 35 years old). Nevertheless, in most of the accidents, the primary collision factor was an illegal turn or maneuver by the bicyclist. This information suggests that increased education and enforcement could be an important tool in decreasing accidents for both age groups.

Trends and Comparisons

Table 1 below compares the number of accidents and party at fault in unincorporated San Joaquin County from 1998 through 2000. Annually, the number of bicycle accidents averages approximately 36 per year. The distribution for “party at fault” is similar across the three years.

TABLE 1 UNINCORPORATED SAN JOAQUIN COUNTY BICYCLE ACCIDENT SUMMARY (JANUARY 1998 – DECEMBER 2000)					
Year	Accidents		Party at Fault		
	Total	Fatalities	Bicyclist	Driver	Other
1998	35	0	28	7	
1999	37	0	27	9	1
2000	36	0	28	8	
Total	108	0	83	24	1
Source: Reported accidents according to California Statewide Integrated Traffic Records System (SWITRS) reports.					

The accident information from Table 1 was combined with population data from 2000 to estimate an annual bicycle accident rate per 1,000 persons. The purpose of this estimate was to compare the accident rate for unincorporated San Joaquin County with other similar counties. The accident rate comparison is shown in Table 2.

TABLE 2 COMPARISON OF 2000 BICYCLE ACCIDENTS PER 1,000 PERSONS – SELECTED CALIFORNIA COMMUNITIES			
Community	2000 Population	Accidents/Year ¹	Accidents/1,000 Persons
San Joaquin County (unincorporated)	133,100	36	0.27
Sutter County (unincorporated)	30,150	8	0.26
Yuba County (unincorporated)	43,600	12	0.27
Solano County (unincorporated)	19,650	5	0.25
Notes: ¹ Reported 2000 accidents according to Statewide Integrated Traffic Records System (SWITRS) summary report.			

The information in Table 2 shows that the 2000 bicycle accident rate per 1,000 persons was similar for all four counties. Although this comparison is based on a small sample size and only one year of data, the comparison is meaningful in that the accident rate appears to be similar for unincorporated areas with different populations. For example, Yuba, Sutter, and San Joaquin County bicycle accident rates in Table 2 were very similar even though the population in unincorporated Yuba and Sutter Counties was less than 50,000 and the population in unincorporated San Joaquin County was over 133,000.

SAFETY PROGRAMS

Safety is a major concern of both existing and potential bicyclists. For those who ride, safety is typically an on-going concern and sometimes a distraction. Potential riders often consider safety one of the most compelling reasons not to ride. These reasons make safety education for both children and adults an important component of this plan.

Many bicyclists, of all ages, lack the proper instruction for riding on roadways. This is very evident upon analyzing bicycle accident data for San Joaquin County over the past three years. During the period from January 1994 to June 1997, approximately 139 bicycle accidents were reported in San Joaquin County. Of the accidents reported, the primary collision factor for approximately 73 percent of the accidents was an illegal turn or maneuver by the bicyclist. This information suggests that increased education and enforcement could be an important tool in decreasing accidents for all age groups.

In San Joaquin County, the California Highway Patrol has been the primary agency to provide bicycle safety and educational presentations to elementary school children. However, budget constraints have limited presentations to being conducted based on request. Additionally, the California Highway Patrol does not have sufficient resources to provide education and safety programs for adult bicyclists in San Joaquin County. San Joaquin County law enforcement agencies actively enforce the California bicycle helmet law for riders under the age of 18, but they do not proactively provide educational programs on bicycle safety.

VI. ANALYSIS OF DEMAND

The objective of analyzing bicycle travel demand is to identify existing bicycle ridership levels and travel patterns, along with projected future use and possible methods for stimulating additional ridership. This section provides information about existing and future development patterns and their relationship to bicycle ridership.

EXISTING LAND USE AND SETTLEMENT PATTERNS

San Joaquin County's 2000 population of 566,600 is concentrated largely in its seven cities: Stockton, Tracy, Manteca, Lodi, Escalon, Ripon and Lathrop. The City of Stockton accommodates the majority of the population with approximately 246,400 residents. Though only one of seven cities in the County, the relative size of Stockton's economy, population and land use, make its development trends of regional interest. At the hub of an extensive railroad network and containing the State's largest inland deepwater port, Stockton plays a principal role in the County's economic well being.

Interestingly, the most recent and significant development that San Joaquin County has been experiencing, is in several of its Southern cities including Tracy, Lathrop, Manteca, Ripon, and to a lesser extent Stockton. These areas are experiencing the greatest growth as they feel the first wave of out-migration from the Bay Area. The effect has been a transformation of the south county into a bedroom community for the Bay Area job market.

Table 3 below shows the January 1, 2000 population and demographics for San Joaquin County including the unincorporated areas. Approximately twenty-three percent of the County population resided in unincorporated areas. Most of these people live around the fringes of Stockton or in unincorporated urbanized communities including Thornton, Lockeford, Clements, Linden, Woodbridge, and French Camp. These unincorporated communities, many of whose origins are traced to serving surrounding agricultural activities, function as important residential and employment centers. Appendix B contains maps showing the population settlement patterns for San Joaquin County.

TABLE 3
SAN JOAQUIN COUNTY POPULATION AND DEMOGRAPHICS

City/Jurisdiction	2000 Population ¹	Adjusted 2000 Employment ²
San Joaquin County	566,600	201,671
Escalon	5,825	2,314
Lathrop	9,975	3,143
Lodi	57,900	31,092
Manteca	49,500	15,393
Ripon	10,400	3,919
Stockton	247,400	88,133
Tracy	54,200	17,089
Unincorporated	131,400	40,589
Source: ¹ San Joaquin Council of Governments, Research & Forecasting Center ² Adjusted 2000 EDD data is factored from 1999 EDD countywide estimate of 198,300 at a 1.7% annual growth rate.		

FUTURE LAND USE AND SETTLEMENT PATTERNS

With future projections suggesting that the Bay Area will continue its dominance as the major urban center of Northern California, it is expected that San Joaquin County will continue to experience moderate to significant increases in population and employment growth. Table 4 shows projections for San Joaquin County's population and demographics over the next 25 years. According to these projections, San Joaquin County will almost double its population size, and the south County will more than double its population and employment in some areas. Population and employment in the unincorporated communities and County areas will significantly increase as well.

These types of growth patterns will place enormous burdens on San Joaquin County's regional transportation facilities and its many users. This will play a major role in the need for alternative modes of travel within the County, and to the surrounding counties and Bay Area. Transportation modes such as rail, public transit, and bicycling will become more attractive options for work trips, as well as recreational trips. Additionally, multimodal facilities, which allow for combined use of transportation modes, will become more viable alternatives. Appendix B contains San Joaquin County's 2010 General Plan Map and other maps showing the future 2010 population settlement patterns for San Joaquin County. Similar maps for employment are not available, but the distribution of employment is projected to have a corresponding increase with population.

TABLE 4
SAN JOAQUIN COUNTY 2025 POPULATION AND DEMOGRAPHICS¹

City/Jurisdiction	Adopted 2025 Population	Percent Change from 2000	Adopted 2025 Employment	Percent Change from 2000
San Joaquin County	900,335	58.9%	283,569	40.6%
Escalon	9,883	70.0%	3,254	40.6%
Lathrop	23,902	139.6%	4,419	40.6%
Lodi	72,617	25.4%	43,718	40.6%
Manteca	86,370	74.5%	21,644	40.6%
Ripon	23,637	127.3%	5,510	40.6%
Stockton	406,482	64.3%	123,923	40.6%
Tracy	137,341	153.4%	24,028	40.6%
Unincorporated	140,103	93.8%	57,073	40.6%
Source ¹ San Joaquin Council of Governments, Research & Forecasting Center				

BICYCLE RIDERSHIP

Bicycle ridership levels are not easily measured or projected for an entire County without extensive data collection efforts. Existing and available data currently includes the 1990 Census and the 1991 Statewide Travel Survey conducted by Caltrans, while projections regarding future travel demand are limited to just vehicle trips for the County. With this limited amount of information, the following discussion describes both existing and future bicycle ridership levels and their relationship to the availability of a comprehensive bikeway system.

Table 5 presents 1990 Census data for the journey-to-work mode split for San Joaquin County. The term “mode split” refers to the form of transportation a person chooses to use, such as driving, carpooling, using public transportation, and bicycling. As indicated in Table 5, the mode split for bicycle trips to work is 0.8 percent, which equates to approximately 1,570 daily commuter bicycle trips. Additional information provided from the 1991 Statewide Travel Survey showed that daily bicycle trips represent approximately 1.2 percent of the total daily person trips in San Joaquin County. Using this mode split and an estimate of 1,580,000 daily person trips in San Joaquin County, the estimated number of existing daily bicycle trips in the County is about 19,000 (San Joaquin Council of Governments, 1994). This trend coupled with the projected increases in population over the next 25 years will result in increased bicycle trips for both commuting and recreational purposes.

TABLE 5
1990 CENSUS JOURNEY-TO-WORK MODE SPLIT FOR SAN JOAQUIN COUNTY

Mode (Home-based work trips)	Split (Percentage)
Drive Alone	74.6%
Carpool	16.2%
Public Transportation	1.2%
Bicycle	0.8%
Walk	2.9%
Other	4.3%

Source: 1990 U.S. Census Data.

In projecting future bicycle use, it is important to consider such factors as the overall transportation, land use, urban design and environmental policies of the County. These factors will have a direct effect to the extent that bicycle ridership levels increase, decrease or remain the same. Without any new bikeway facilities in the County, the existing mode share for bicycle travel during commute hours (i.e., 0.8 percent) or on a daily basis (i.e., 1.2 percent) would not be expected to change. However, the bicycle mode share could increase to as much as 2.4 percent by 2010 according to the 1994 SJCRBMP. This increase would be attributable to implementation of employer trip reduction programs, more funding for multimodal projects, state and federal requirements to reduce congestion and improve air quality, and the construction of new bicycle facilities.

VII. PROPOSED SYSTEM

This section describes the proposed system of bikeways for San Joaquin County that was developed in this planning effort. The first step in this process consisted of an extensive review and classification of the existing roadway system to determine the relative feasibility and cost of improving County roadways to accommodate bikeway facilities. This effort relies on a classification system for roadways according to the level of cost associated with widening an existing roadway to accommodate a minimum four-foot shoulder, which is necessary to accommodate a Class II bike lane. The classification system uses the following three categories:

- Minor - Minor improvements are required to accommodate a four-foot shoulder including paving and striping;
- Moderate - Moderate improvements are required to accommodate a four-foot shoulder including widening, paving, and striping; and
- Major - Major improvements are required to accommodate a four-foot shoulder including grading, drainage, widening, paving, and striping.

The selection of specific roadways for review was based on a variety of input. Initial roadways included routes of regional significance identified in the 1994 SJCRBMP, and roadways identified by County staff. Additional roadways were added as follows:

- Fehr & Peers Associates added roadways based on logical connections between recreational origins and destinations;
- OSC members at their first meeting on October 29th added roadways that connected to the California Aqueduct Bike Trail including Corral Hollow Road and Chrisman Road;
- Members of the general public attending the November 12th and 13th public workshops added Union Road, Yosemite Avenue, Manthey Road, Canal Boulevard, MacArthur Drive, Lathrop Road, Valpico Road, Delta Avenue, Lammers Road, and Cohen Road; and
- Stockton Bicycle Club members added Collier Road, Mackville Road, Woodbridge Road, Armstrong Road, Shelton Road, Milton Road, Naglee Road, Von Sosten Road, Carlin Road, Crocker Road, and Undine Road.

Figure 4 displays the existing facilities inventory according to these categories for unincorporated County roadways. In addition to the classification of individual roadways, existing bikeways and major constraints such as narrow bridges were identified during the field inventory. The figure reveals that some of the unincorporated County roads would require minor improvements to provide a four-foot shoulder. This condition stems from the County's design standards for unincorporated roadways. Many roadways were designed to the "Rural Road" standard. The design standards for a "Rural Road" suggest a pavement section of approximately 32 feet, which is typically striped to delineate two 12-foot travel lanes and shoulders. In most cases, roadways designed under this standard can accommodate four-foot shoulders with a limited amount of new pavement. It should also be noted that there are various locations where minor improvements are identified in conjunction

with constraints. These various constraints (i.e., bridges, poles, culverts, railroad crossings, etc.) should be reviewed more closely during project implementation.

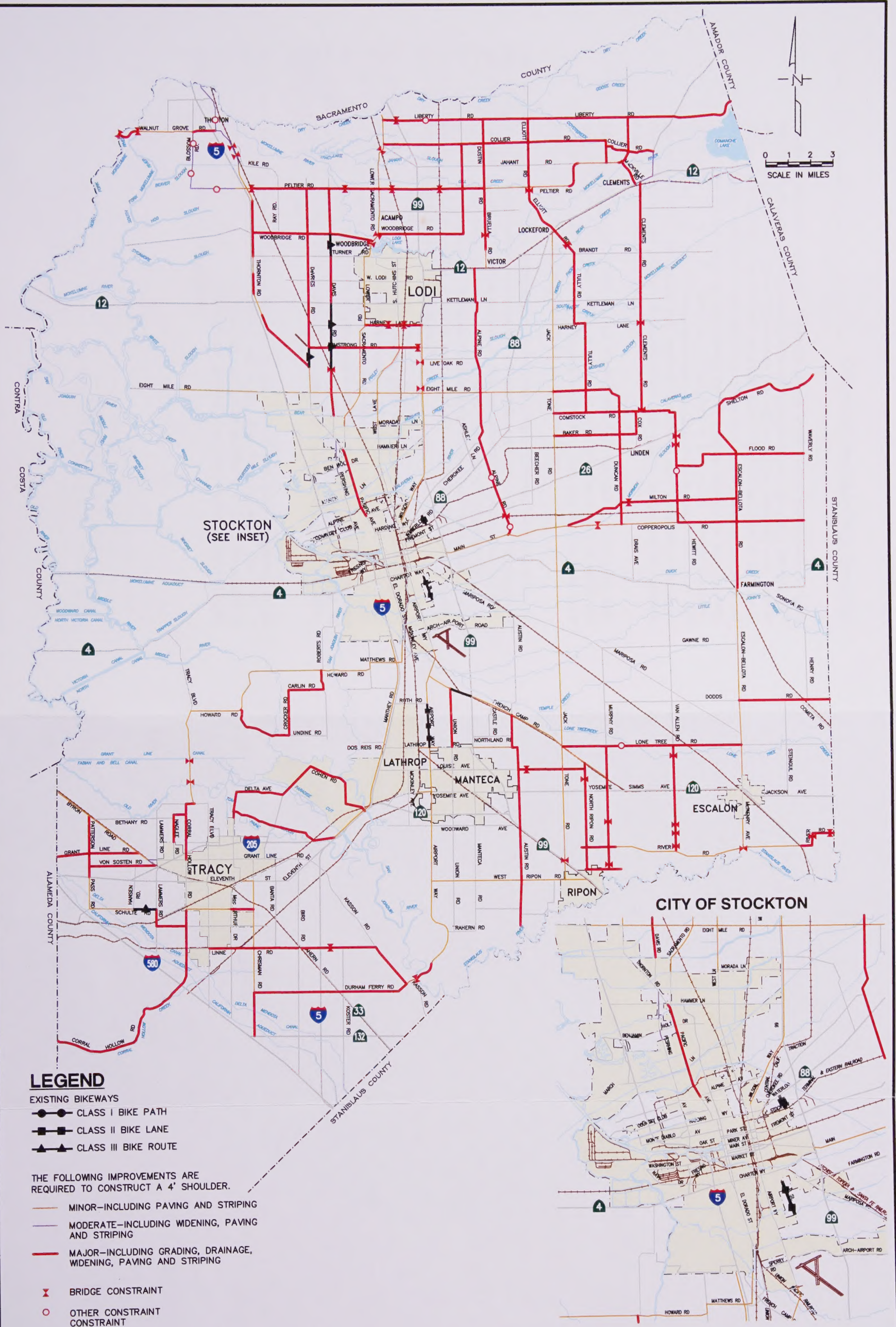
Most other roadways were classified as requiring major improvements to provide four-foot shoulders with the exception of a limited number of roadways in the Thornton and Tracy areas, where moderate improvements would be sufficient. Along many of the roadways classified as needing major improvements, bridge or other constraints also existed. Narrow bridges were the most common constraint while the utility poles or other structures too close to the roadways are examples of “other” constraints that were encountered.

The use of the classification system is an important part of this bikeway plan. County staff and the OSC in the selection of specific routes included in the proposed system of bikeways for this plan and to develop cost estimates used this information.

PROPOSED SYSTEM DEVELOPMENT

After completing the existing conditions inventory, an initial proposed system of bikeway routes was identified based on input from the OSC and a review of individual routes according to the following bikeway planning criteria:

- Local Input - Consider local information in the bikeway planning process, including input from bicycle club members, bike shop owners, current riders, and the general public.
- Use - Bikeways contained in the proposed system should reflect use levels that are commensurate with the level of investment required for construction and maintenance.
- Coverage - The system should provide balanced access from all portions of San Joaquin County’s population centers for both commuting and recreation routes.
- Safety - The system should provide the highest level of safety possible while eliminating major safety concerns such as narrow roadways.
- Connectivity - The system should provide bikeway connections to major activity centers, multi-modal transfer locations, and to routes that provide access to neighboring counties. Activity centers include residential neighborhoods, schools, regional parks, shopping centers, employment centers, government centers, transit centers, and other recreational opportunities. Major gaps and barriers, including narrow bridges and roadways, should be targeted as high priority items.



- On-Street Bikeways – Class III bike routes should be provided as the preferred on-street bikeway facility since it has been determined for purposes of this study, that Class III bikeways that provide shared right-of-way use with motorists, were the most suitable facility for designing on the County’s rural roadways. Class II bike lanes should be used in urban areas while Class III bike routes should be used on lower volume roadways and when Class II bike lanes are not feasible due to existing physical or environmental constraints. As with bike lanes, the designation of bike routes should indicate to bicyclists that there are particular advantages to using these routes as compared with alternative routes. This means that responsible agencies have taken actions to assure that these routes are suitable as shared routes and will be maintained in a manner consistent with the needs of bicyclists.
- Off-Street Bikeways - Where feasible, Class I bike paths on grade separated rights-of-way should be considered. These bikeways provide a higher degree of safety and recreational benefit than bikeways located on streets. They can also become linear parks, adding to the range of amenities for local communities.

After refining the proposed system according to the bikeway planning criteria, the proposed system map was distributed to local agencies and interested individuals or groups to obtain their comments about specific routes. In addition, the proposed system map was presented to the general public at the January 28th and 29th, 1998 public workshops. Based on comments received through this review process, the proposed system map shown in Figure 5 was prepared. This figure shows specific routes proposed as part of this planning effort as well as regional routes of significance in unincorporated San Joaquin County identified in the 1994 SJCRBMP.

The proposed system developed as part of this planning effort includes a total of approximately 201 miles (322 km) of bikeway facilities. The system connects each community in San Joaquin County, provides regional connections to other counties including Alameda, Amador County, Calaveras County, Contra Costa County, Sacramento County, and Stanislaus County. Each route is classified according to standards defined in “Chapter 1000: Bikeway Planning and Design” contained in the Highway Design Manual, Fifth Edition, California Department of Transportation, February 1, 2001, and presented earlier in Figure 1.

The reader should note that the Caltrans standards for the Class III bike route designation do not specify a minimum shoulder width or roadway lane width. For the purposes of this study, a minimum shoulder width of four feet is desirable but may not be feasible in all locations because of physical or environmental constraints, and added cost. Table 6 shows the number of proposed miles and kilometers for each bikeway classification.

TABLE 6
LENGTH OF PROPOSED SYSTEM BY BIKEWAY CLASSIFICATION

Bikeway	Miles	Kilometers
Class II	2.2	3.5
Class III	199.4	319.0
Total	201.6	322.5

The proposed system consists of Class II and III facilities. In general, the Class II and III bike facilities were placed on designated roadways that would provide strategic connections to other bike routes or intermodal connections; and when possible, on roads where existing or projected traffic volumes were anticipated to justify facilities to safely accommodate bicyclists.

REGIONAL AND MULTI-MODAL BIKEWAY CONNECTIONS

Regional connections include those bikeway facilities that connect urban areas in San Joaquin County with urban areas in surrounding counties. Multi-modal connections allow bicyclists to transfer to other modes such as buses and/or rail. Including these components in the discussion about the proposed system is important for the development of a bikeway system that provides a high degree of both accessibility and mobility.

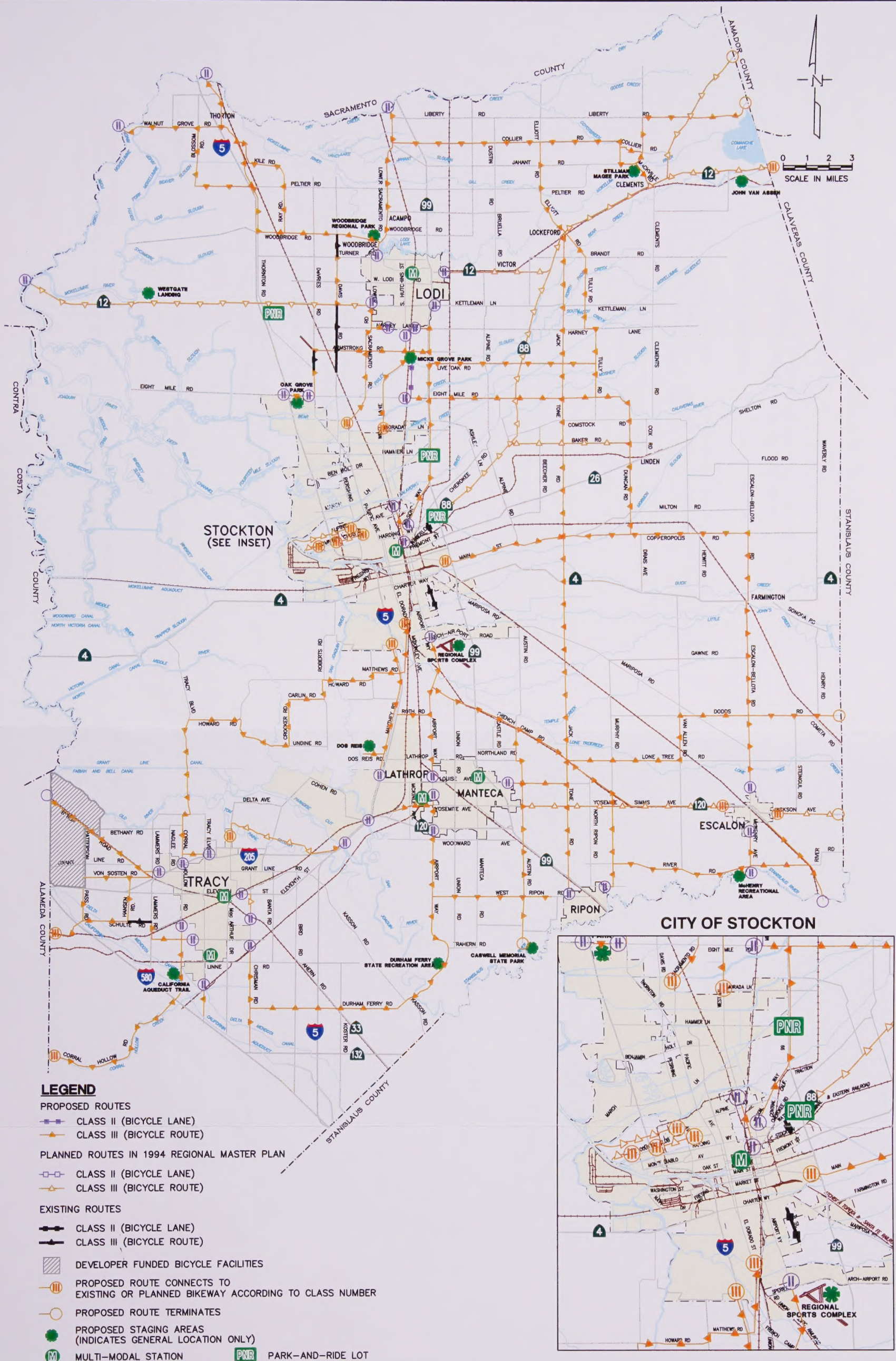
Regional Connections

Figure 5 shows the specific types of bikeway facilities that unincorporated bikeways will connect with in adjacent Counties. This information is useful for developing a coordinated regional approach to constructing new bikeways. In general, San Joaquin County should look for opportunities to coordinate the funding and construction of regional bikeway projects with adjacent jurisdictions when these regional routes cross County lines.

Multi-modal Connections

The proposed bikeway system includes numerous routes that interconnect with existing transit routes and transfer stations. Since SMART provides bike racks on most buses, transit is very accessible to bicycles. Figure 5 shows the proposed multi-modal stations in San Joaquin County, which will be located in Stockton, Lodi, Tracy, Manteca and Lathrop. Although these stations are located in the incorporated cities, this plan has been developed to ensure that unincorporated and incorporated bikeways are connected to provide direct access to the multi-modal stations.

The multi-modal stations are all being planned as transit hubs where bus, rail, bike, automobile, vanpools, and pedestrian modes of travel are integrated. These stations are proposed to include design features that would improve pedestrian and bicycle accommodations. For example, traffic signals in the station vicinities will have adequate pedestrian phases in the traffic signal timing and signal detectors sensitive to bicycles to facilitate pedestrian and bike access to the station sites. To encourage bicycling to the stations, bike routes will have signs directing cyclists from the designated bike routes to the stations.



SUPPORT FACILITIES AND PROGRAMS

Support facilities and educational programs are an important part of the proposed bikeway system. Specific recommendations on how to improve these conditions are listed below.

Bicycle Parking, Shower, and Locker Facilities

Support facilities such as bicycle parking, shower and locker facilities can encourage bicycling by reducing the threat of theft and making riding more convenient. Properly designed bike racks should be available at major bicycle destinations in unincorporated San Joaquin County. For the most part, these facilities should be required for new developments that are likely to experience a demand for bicycle parking such as commercial areas, libraries, schools, and major employers. In some cases, though, existing activity centers should add bicycle-parking facilities. The type of parking facility (bike rack or bicycle locker) should be selected based on (a) cost, (b) ease of use, and (c) ability to prevent theft.

Access to shower and locker facilities may help encourage people to commute by bicycle, particularly in the summer months. Many jobs require employees to wear specific uniforms or formal attire such as suits and ties. By having shower and locker facilities, employees have the option to shower and dress at work. This is an important consideration for bicycle commuters since they cannot control their travel environment and are much more dependent on support facilities located at the workplace.

The following action is recommended for increasing the number of locations with bicycle parking, shower, and locker facilities:

- Encourage the installation of bicycle parking, shower, and locker facilities as conditions of approval for major new developments.
- Encourage the provision of secure bicycle lockers at employment centers, transit stations/stops, and park and ride lots. Long-term storage lockers should fully conceal the bicycle and allow access only to the owner. Lockers should be user friendly, with directions on how to use the locker prominently displayed.

San Joaquin County does not have any support facilities planned at the present time; therefore, a map of proposed support facilities is not included in this Bikeway Plan.

Crossing Protection

These improvements should be targeted for major intersections on the proposed bikeway network, and at locations where school children cross a busy street to gain access to their school. The following steps are recommended to build upon this effort:

- Use signing, striping, crossing guards, flashing beacons, and pedestrian actuated signs at street crossings with high levels of pedestrian and bicycle demand when warranted by engineering standards.

- Install detectors at signalized intersections along the bikeway system as intersections are upgraded. Detectors should be located within the striped bike lane either along the curb or between the right-turn lane and through lane.

Educational Programs

The school system provides an ideal opportunity to reach most children with information regarding bicycle safety. In some cases, school district officials lack the knowledge, proper training, and resources to implement effective bicycle education and safety programs. As a result, schools are compelled to seek outside assistance and resources. This approach typically results in bicycle safety education being provided only when requested instead of through a pro-active approach that reinforces bicycle safety over time.

Raising awareness and educating adults on bicycle safety is another critical issue. Providing bicycle safety education for adults can be challenging because of the difficulty in finding the most effective method of communication that will keep their interest. Probably the most effective opportunities are through employer activities and community events.

To improve bicycle education and safety in San Joaquin County, a bicycle education and safety program should be implemented. The program should include, but not be limited to, the following elements:

- Bicycle education and safety through the school system that addresses safe riding techniques and helmet use. The program should involve local community representatives such as law enforcement, traffic engineering, businesses and bicycle clubs. Additionally, the program should be provided regularly rather than on an as-per-request basis.
- Community sponsored Bicycle Events should be planned to provide education and safety outreach. Event coordination should involve professionals such as traffic planners, traffic engineers, local law enforcement, community leaders and decision-makers to facilitate the bicycle safety and education elements. Such events could include bike-to-work day, special rides, and bicycle rodeos.

VIII. COST AND FUNDING ANALYSIS

Implementation of the proposed system will require funding from local, state, and federal sources and coordination with other agencies. To facilitate funding efforts, this section presents conceptual construction cost estimates for the proposed system along with a brief description of past expenditures for bikeway and pedestrian facilities.

COST ESTIMATES

Table 7 contains a unit cost summary for bikeway facilities in San Joaquin County. These cost estimates are based on actual costs experienced in the County and various other California communities. However, they should be used only to develop conceptual construction cost estimates. More detailed estimates should be developed after preliminary engineering.

Facility Type	Estimated Cost ² Per	
	Mile	Kilometer
Class III Bike Route ¹		
• signing only	\$1,000	\$600
• signing plus minor roadway improvement	\$40,000	\$25,000
• signing plus moderate roadway improvement	\$150,000	\$93,750
• signing plus major roadway improvement	\$300,000	\$187,500
Class II Bike Lane ¹		
• signing and striping only	\$5,000	\$3,125
• signing and striping plus minor roadway improvement	\$50,000	\$31,250
• signing and striping plus moderate roadway improvement	\$300,000	\$187,500
• signing and striping plus major roadway improvement	\$500,000	\$312,500
Class I Bike Path		
• construct asphalt path on graded right of way with drainage and new sub-base	\$500,000	\$312,500
• construct asphalt path on un-graded right of way with drainage and new sub base	\$1,000,000	\$625,000
Notes: ¹ Minor, moderate, and major designations correspond to the designations used to classify roadways in the existing facilities inventory (refer to page 26 for descriptions of each designation).		
² Does not include right-of-way.		

For purposes of this plan, the use of specific unit costs relied on information from the existing conditions inventory. The inventory classified existing roadways according to the relative level of improvement and cost to add four-foot shoulders to the current roadway sections. The three classifications used in the inventory included minor, moderate, and major. This approach results in some unit costs for Class III bikeways that include roadway widening. The Class III bike route cost estimates for this plan conservatively assume that a four-foot shoulder will be provided.

Using the cost information in Table 7, conceptual construction costs were developed for the proposed routes shown in Figure 5. A summary of these costs is presented in Table 8 according to the type of facility. Note that Table 8 does not include the costs for constructing the planned regional routes. The cost information for these routes is contained in the 1994 SJCRBMP. Conceptual construction cost estimates for individual routes are contained in Appendix C.

TABLE 8 CONCEPTUAL CONSTRUCTION COST ESTIMATE SUMMARY	
Bikeway Classification	Total Cost
Class II Bike Lanes	\$1,010,000
Class III Bike Routes	\$48,910,000
Total	\$49,920,000

Table 8 shows a total cost for constructing the proposed system of approximately \$50 million. This total consists of approximately \$1 million for Class II bike lanes and almost \$49 million for Class III bike routes. The large cost for Class III facilities is a result of the conservative assumption that four-foot shoulders would be provided in all cases. Four-foot shoulders are desirable but not mandatory. As stated earlier, a Class III designation according to Caltrans indicates to bicyclists that there are particular advantages to using these routes as compared with alternative routes. This means that responsible agencies have taken actions to assure that these routes are suitable as shared routes and will be maintained in a manner consistent with the needs of bicyclists. This does not mean that a four-foot shoulder will be provided. Determination of an adequate shoulder width will be determined by the Department of Public Works on a case-by-case basis as individual projects advance to implementation.

The cost of the proposed system would be difficult to fund through existing local programs. However, many potential funding opportunities exist at the federal, state, and local levels for constructing bikeway facilities. A general description of these sources is provided below. More detailed funding information can be reviewed in the Guide to Bicycle Program Funding in California, Planning and Conservation League, April 1995.

POTENTIAL FUNDING SOURCES

In some cases, portions of the proposed system will be completed as part of future development and road widening and construction projects. For those portions that will rely on other funding mechanisms, the following discussion provides descriptions of the more effective potential funding sources.

FEDERAL SOURCES

Federal funding through the TEA-21 (Transportation Equity Act for the 21st Century) program could provide the bulk of non-local funding. TEA-21 consists of three major programs:

- Surface Transportation Program (STP);
- National Highway System (NHS); and
- Congestion Mitigation/Air Quality Program (CMAQ).

Other related federal programs include the following:

- Transportation Enhancement Activities (TEA);

- Hazard Elimination;
- Bridge Repair and Replacement;
- National Recreation Trail;
- Bicycle Transportation and Pedestrian Walkways;
- Transit Enhancement Activity;
- Scenic Byways; and
- Section 402 (Safety).

TEA-21 funding is administered through SJCOG. Most of the funding programs are transportation versus recreation oriented, with an emphasis on (a) reducing auto trips and (b) providing an intermodal connection. Funding criteria includes completion and adoption of a bikeway plan, quantification of the costs and benefits of the system, proof of public involvement and support, environmental compliance, and commitment of local resources. In most cases, TEA-21 provides matching grants of 80 to 90 percent. Other federal funding sources include the Land and Water Conservation Fund Program and the Recreation and Public Purposes Act (Bureau of Land Management).

STATE SOURCES

The following State of California sources provide funding that could be applicable for San Joaquin County.

Bicycle Transportation Account

The State Bicycle Transportation Account (BTA) is an annual program that is available for funding bicycle projects. Eligible project types include bikeways, bicycle parking, bicycle racks on public transit vehicles, traffic control devices, safety improvements on existing bikeways, planning, and improvement and maintenance of bikeways. Available as grants to local jurisdictions, the emphasis is on projects which benefit bicycling for commuting purposes. Funding for this program was recently increased from \$360,000 annually to approximately \$7,000,000 annually through 2006 due to the passage of Assembly Bill 1020. After 2006, the amount available through the BTA annually will be \$5,000,000.

Environmental Enhancement and Mitigation Program (EEM)

Bicycle projects can qualify for EEM funds if they meet the program's requirements. Any non-profit organization can sponsor projects, which are submitted to the State Resources Agency for evaluation in June/July of each year.

Assembly Bill 1475 - Safe Routes to School Bill

This bill redefines transportation safety in California by investing \$20 million per year in bike lanes, bicycle and walking trails, new sidewalks and traffic-calming projects near California schools. The

first and second round of project solicitation has been completed. It is anticipated that this program will continue and provide opportunities for future funding applications.

State Highway Operations and Protection Program

Known as the SHOPP, this program is a state-funding category used by Caltrans to maintain and operate state highways. Local jurisdictions are encouraged to work with Caltrans to help define projects, including bike projects, on state highways.

LOCAL SOURCES

A variety of local sources may be available for funding bikeway and pedestrian improvements; however, their use is often dependent on political support.

Measure K

On November 6, 1990, the voters of San Joaquin County passed the Measure K sales tax initiative. The Measure calls for a ½-cent countywide sales tax to be collected for 20 years, to pay for much-needed transportation projects throughout the County. Approximately \$20 million is collected annually, of which approximately \$250,000 is directed toward bicycle projects.

Local Transportation Fund (LTF)

Under Article 3 of the Transportation Development Act (TDA), up to two percent of the LTF allocation to cities and counties can be used for bicycle and pedestrian projects. Revenues to the LTF program are derived from 1/4¢ of the statewide sales tax. These funds are distributed through the SJCOG.

New Construction

Future road widening and construction projects are one means of providing on-street bikeways. To ensure that roadway construction projects provide these facilities where needed, roadway design standards need to include minimum cross-sections that have sufficient pavement for on-street bikeways and the review process for new development should include input pertaining to consistency with the proposed system. Future development in San Joaquin County will contribute to the implementation of new bikeway facilities only if projects are conditioned and roadway design standards are update to include bikeway facilities.

Impact Fees

Another potential local source of funding is developer impact fees, which are typically tied to trip generation rates and traffic impacts produced by the proposed development. A developer may reduce the number of trips (and hence impacts and cost) by paying for on- and off-site bikeway improvements that will encourage residents to bicycle rather than drive.

Assessment Districts

Different types of assessment districts can be used to fund the construction and maintenance of bikeway facilities. Examples include Mello-Roos Community Facility Districts, Infrastructure Financing Districts (SB 308), Open Space Districts, or Lighting and Landscape Districts. These types of districts have specific requirements relating to their establishment and use of funds.

OTHER SOURCES

Local sales taxes, developer or public agency land dedications, private donations, and fund-raising events are other local options to generate funding for bikeway and pedestrian projects. Creation of these potential sources usually requires substantial local support.

Funding Strategy

Limited information is available about past expenditures for bikeway and pedestrian facilities in the region as well as the future funding levels that will be available for these types of improvements. Nevertheless, understanding the County's investment in the existing system and what is required to complete the system is important in developing a funding strategy. To add approximately 200 miles (320 kilometers) of new facilities to this system will require an investment of approximately \$50 million, which equates to an annual cost of approximately \$2,500,000 per year over 20 years in constant 2002 dollars. Although some of the proposed system will be constructed as new development or as re-development occurs, a substantial portion of the total cost will rely on public funding. With this understanding, the following options should be considered by the region for fulfilling the funding commitment necessary to complete the proposed system:

- Prepare joint applications with other local and regional agencies for competitive funding programs at the state and federal levels;
- Use existing funding sources as matching funds for state and federal funding where feasible;
- Include bikeway and pedestrian projects in any countywide traffic impact fee programs; and
- Include proposed bikeways as part of roadway projects involving widening, overlays, or other improvements.

The County should also take advantage of private contributions, if appropriate, in developing the proposed system. This could include a variety of resources such as volunteer labor during construction, which is becoming popular for recreational improvements, monetary donations towards specific improvements, and partnering with private organizations.

IX. IMPLEMENTATION

This section addresses a number of issues related to implementation of the proposed system. It includes a discussion of phasing and priorities for implementing specific routes and also contains typical design standards for each bikeway classification.

BIKEWAY SYSTEM PHASING

The specific implementation of any given route, with all other things considered equal, should be based on the following criteria:

- Where an opportunity, such as a road widening or repaving, makes implementation favorable;
- Where an eminent loss of an opportunity, such as the sale of a railroad right-of-way, makes implementation necessary;
- Where resolution of a major obstacle, such as access to flood channel right-of-way, makes implementation necessary; and
- Where the segment is not disconnected or otherwise poorly accessible from the rest of the system.

In many situations, the most needed bikeway improvement may not be implemented first. In these cases, external factors such as new road construction create opportunities to provide new bikeway facilities without consideration for need. Therefore, the proposed system does not include a definitive ranking of the specific routes, but it does include the following list of high priority routes.

Priority Routes

Priority routes were selected based on expected use, type of route, connectivity, and potential improvements to safety. The following routes currently have the highest priority for implementation (not in priority order).

- Class III bike route on Lower Sacramento Road from Harney Lane to Eight Mile Road.
- Class III bike route on Davis Road from Turner Road to SR 12.
- Class III bike route on Armstrong Road from DeVries Road to SR 99 East Frontage Road.
- Class III bike route on Thornton Road from DeVries Road to Eight Mile Road.
- Class III bike route on SR 99 East and West Frontage Roads (various locations).
- Class III bike route on Woodbridge Road from Thornton Road to Lower Sacramento Road.
- Class III bike route on Chrisman Road (various locations).
- Class III bike route on Durham Ferry Road from Chrisman Road to Kasson Road.
- Class III bike route on Jack Tone Road (various locations).
- Class III bike route on Tracy Boulevard.
- Class III bike route on Austin Road from French Camp Road to Louise Avenue.
- Class III bike route on Louise Avenue from Austin Road to Jack Tone Road.

In general, these bikeway facilities should be considered first when applying for funding or advancing a project from the planning to the design stage. San Joaquin County Department of Public Works staff should also periodically review this list of priority routes to determine if any routes should be removed due to various constraints or routes added as necessary to facilitate construction.

BIKEWAY DESIGN STANDARDS

The Caltrans “Highway Design Manual” and AASHTO “Guide for the Development of Bicycle Facilities” provide extensive detail on the design for bikeways. These design standards provide a good framework for future implementation, especially for Class I and Class II facilities. However, the Caltrans guidelines do not specify design dimensions for Class III bike routes in terms of shoulder width. Generally, minimum widths for Class III bikeways are not presented, because the acceptable width is dependent upon many factors including volume and character of vehicular traffic on roads, typical speeds, sight distance and parking conditions.

For purposes of this study, a four-foot paved shoulder is considered desirable although the specific width of roadway shoulders for Class III bicycle routes should be determined by the Public Works Department on a case-by-case basis as individual projects advance to the design and construction stage. A Class III bicycle route will likely have minimal shoulder width if physical, environmental, and/or financial constraints exist. According to the Caltrans Highway Design Manual, “the development and maintenance of four-foot shoulders with a standard four inch edge stripe can significantly improve the safety and convenience for bicyclists and motorists along such routes.”

Generally, Class III bikeways are intended to provide continuity to the bikeway system and connect discontinuous segments of bikeway (normally Class II bike lanes). For purposes of this study, it was determined that Class III bikeways, which provide shared right-of-way use with motorists, were the most suitable facility for designing on the County’s rural roadways. This is based on the reasoning that Class I and Class II bikeways prohibit through travel by motorists, which includes motorized farming equipment. This is a significant issue because the County’s road system is a major transportation network for an approximate \$7.7 billion annual agricultural industry. The system essentially provides a farm-to-market highway network, and necessitates an important part of the community to operate motorized farming equipment on County roads (and shoulders) to conduct business.

Examples of typical standard design treatments for Class I, Class II, and Class III bikeways are provided in Figures 6 through 8. Additionally, optional markings for Class II and Class III facilities shall be determined on a project-by-project basis due to potential differences in the application of standards in urban versus rural areas. This information is provided to assist local agency staff in the design and construction of future bikeway facilities. With these standards and other information contained in this plan, San Joaquin County is prepared to take the next step in advancing bikeway projects from the planning stage to the design and construction phase.

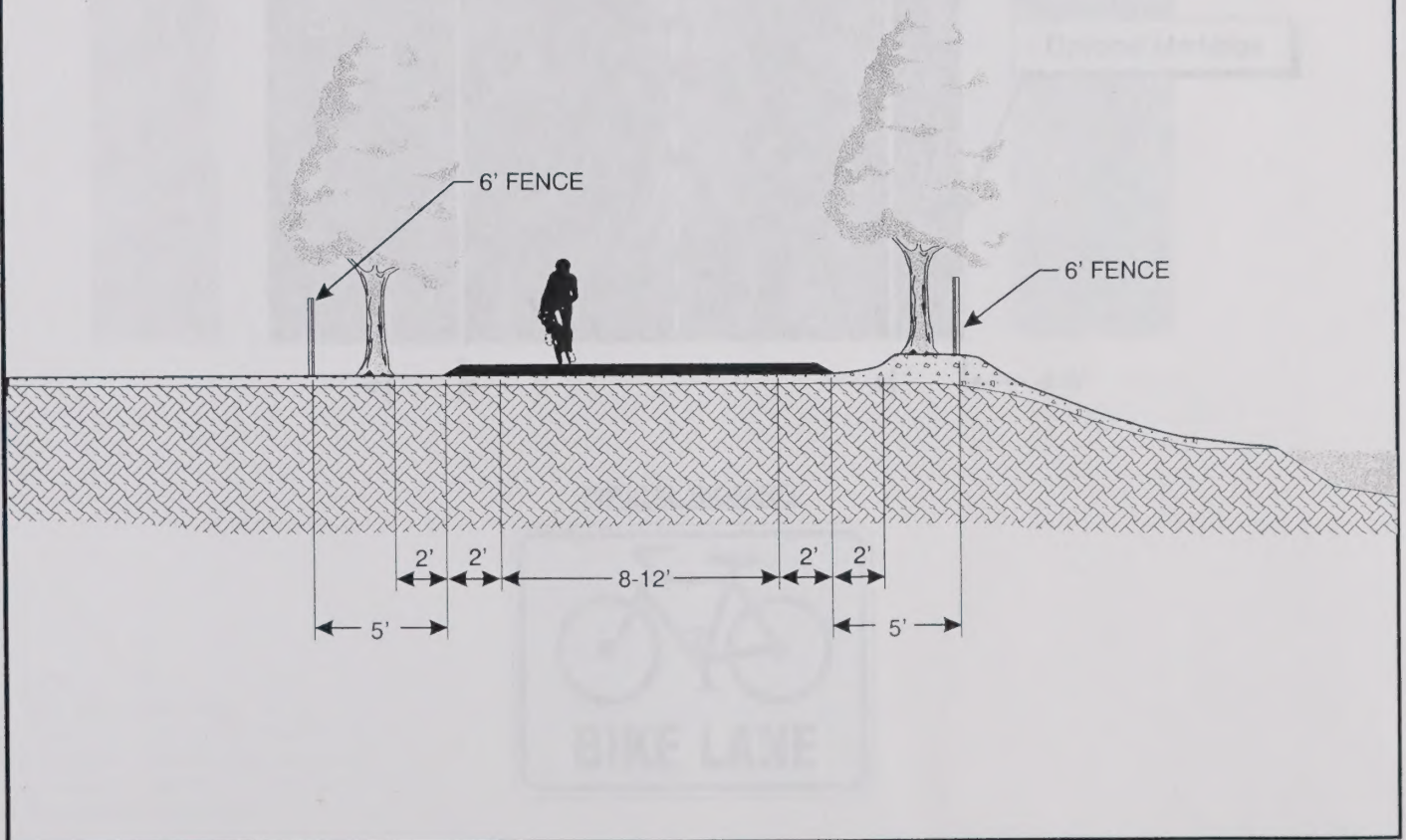
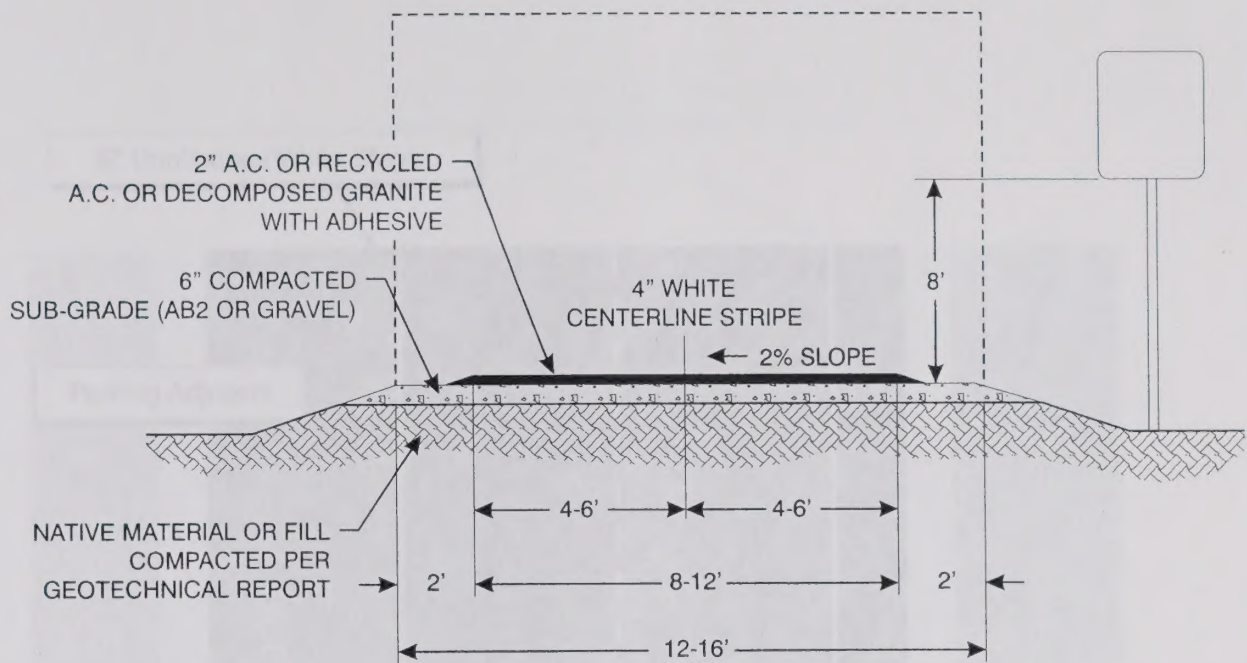
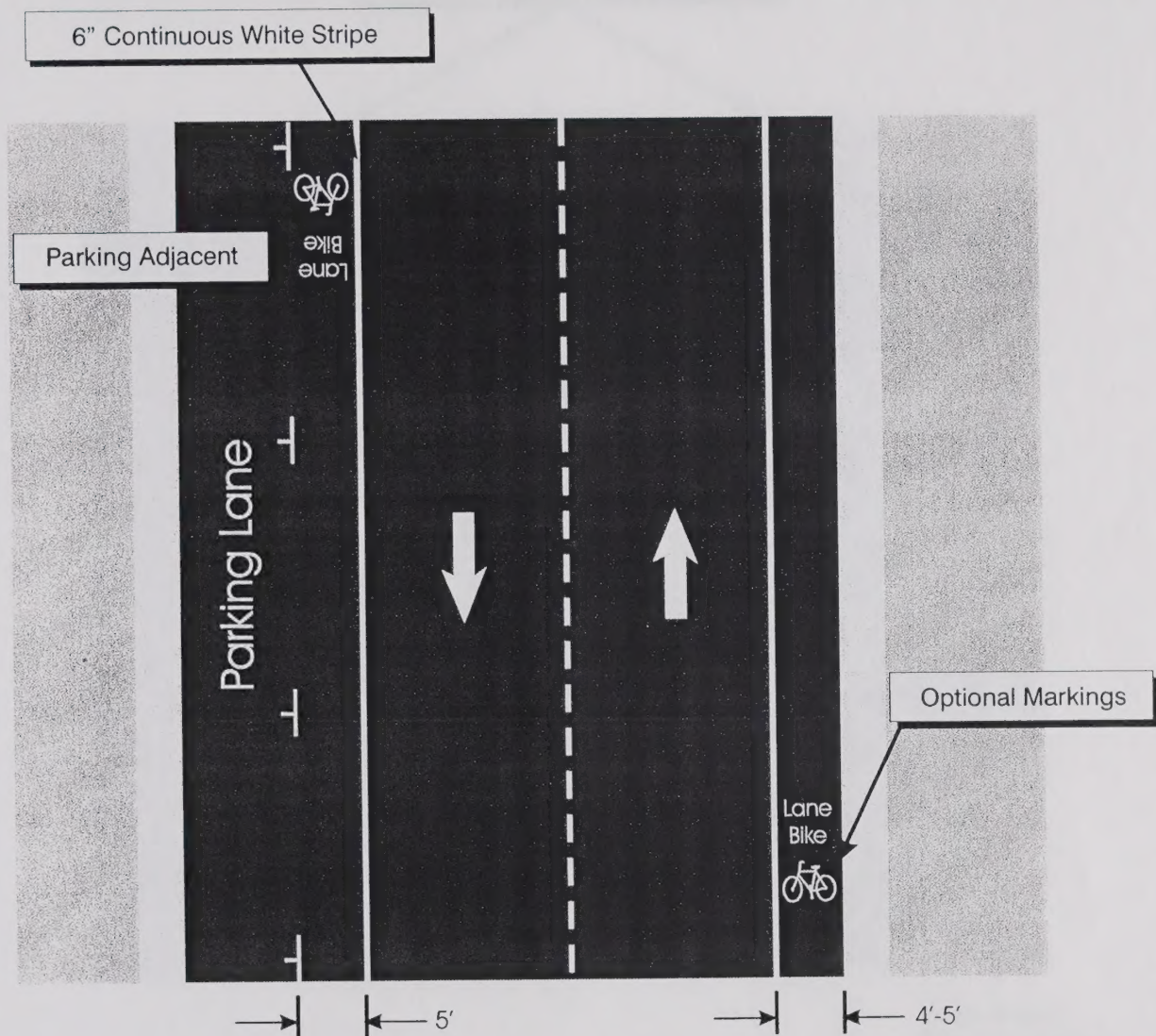


FIGURE 6

TYPICAL CLASS I BIKE PATH



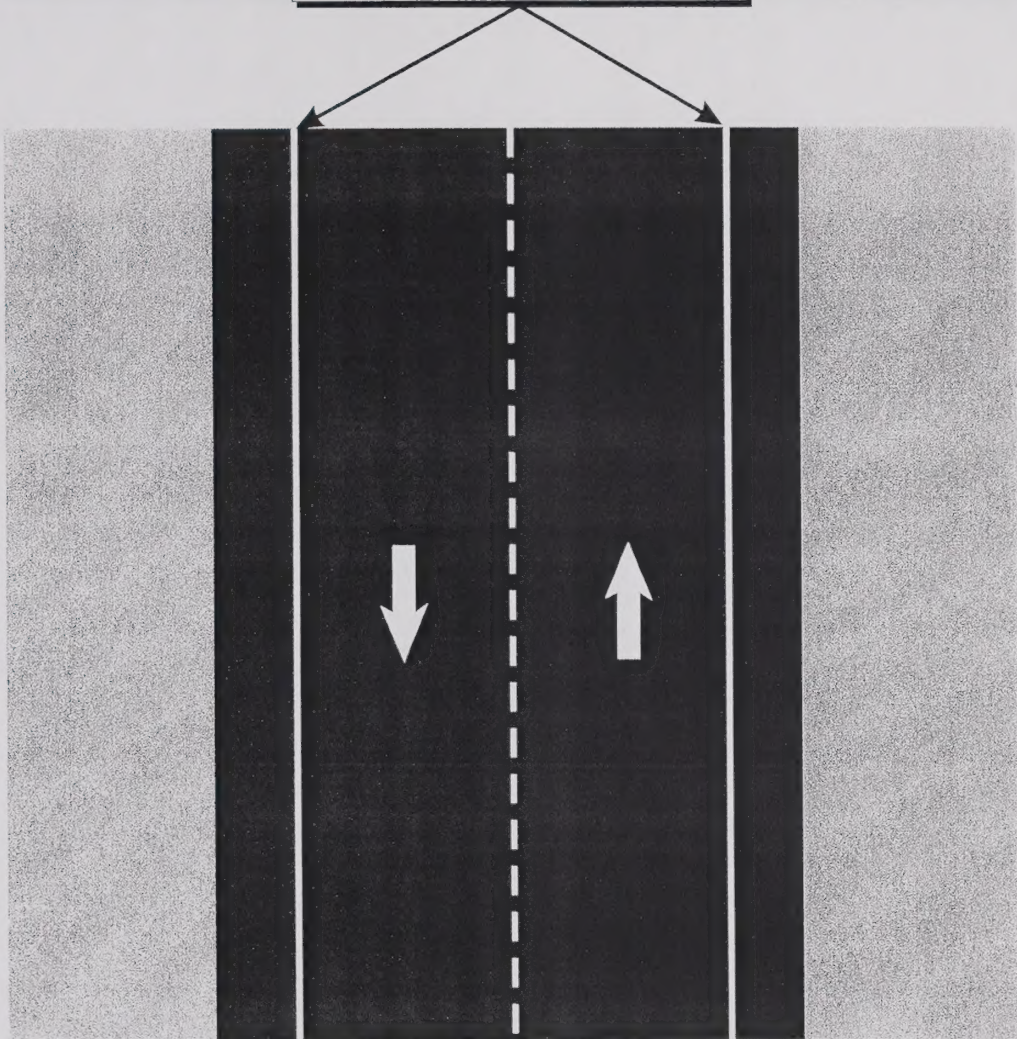
TYPICAL SIGNING



FIGURE 7

TYPICAL CLASS II
BIKE LANES

Optional 4" Continuous White Stripe



Width Varies
(See note below)

TYPICAL SIGNING



NOTE:
Bike route width varies. It is desirable to have a minimum bicycle travel way. However, due to various constraints/conditions, a minimum width cannot be established.

FIGURE 8

**TYPICAL CLASS III
BIKE ROUTES**

fp Fehr & Peers Associates, Inc
Transportation Consultants

APPENDIX A Survey Results

What type of organization are you?

1. Social Enterprise

10

2. Social Enterprise

10

3. Social Enterprise

10

4. Social Enterprise

10

5. Social Enterprise

10

6. Social Enterprise

10

7. Please indicate the percentage of revenue generated from each of the following sources:

	Revenue	Profit	Operating Expenses	Capital	Investment
Government Grants	10	10	10	10	10
Private	10	10	10	10	10
Individuals	10	10	10	10	10
Non-Profit	10	10	10	10	10
Other	10	10	10	10	10

8. Please indicate the percentage of revenue generated from each of the following sources:

	Revenue	Profit	Operating Expenses	Capital	Investment
Government Grants	10	10	10	10	10
Private	10	10	10	10	10
Individuals	10	10	10	10	10
Non-Profit	10	10	10	10	10
Other	10	10	10	10	10

9. Please indicate the percentage of revenue generated from each of the following sources:

	Revenue	Profit	Operating Expenses	Capital	Investment
Government Grants	10	10	10	10	10
Private	10	10	10	10	10
Individuals	10	10	10	10	10
Non-Profit	10	10	10	10	10
Other	10	10	10	10	10

10. Please indicate the percentage of revenue generated from each of the following sources:

	Revenue	Profit	Operating Expenses	Capital	Investment
Government Grants	10	10	10	10	10
Private	10	10	10	10	10
Individuals	10	10	10	10	10
Non-Profit	10	10	10	10	10
Other	10	10	10	10	10

11. Please indicate the percentage of revenue generated from each of the following sources:

	Revenue	Profit	Operating Expenses	Capital	Investment
Government Grants	10	10	10	10	10
Private	10	10	10	10	10
Individuals	10	10	10	10	10
Non-Profit	10	10	10	10	10
Other	10	10	10	10	10

Figure 1
Unincorporated San Joaquin County Recreational Bikeway Plan
Survey Results Based on 141 Responses

1. What type of bicyclist are you?*

A. Casual Recreation	99
B. Regular Commuter	22
C. Mountain Biking	29
D. Club Bicyclist	8
E. Occasional Commuter	22
F. Racing/Touring	10

2. Please indicate the frequency and maximum distance of bicycling trips for the following purposes:

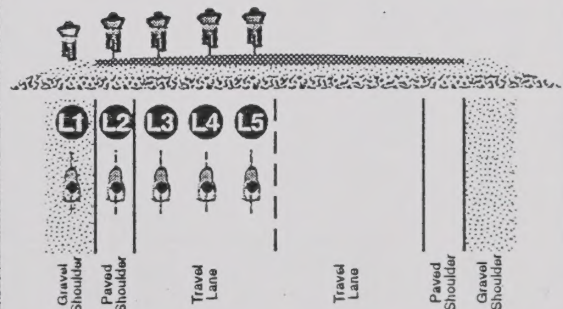
	Work	School	Recreation (Exercise)	Errands	Recreation (Fam./Leisure)
2 or more days/wk	18	25	40	16	23
Once/wk	4	2	12	9	14
1-3 days/mth	6	4	19	3	22
Less than once/mth	4	6	22	12	17
Never	32	28	12	23	11

Range of Miles Reported

Maximum	100	112	120	100	100
Minimum	0.5	0.5	0.5	0.5	0.5
Average	18	15	23	10	10
Median	11	4	10	3	5.5

3. When you ride on rural roads, where do you ride?

L1	23	17%
L2	89	63%
L3	23	17%
L4	3	2%
L5	1	1%



Is this riding location comfortable?

Yes	90	69%
No	41	31%

4. Please indicate some of your major destinations for bicycle trips?

See Figure 2

5. Please provide the area in which you reside:

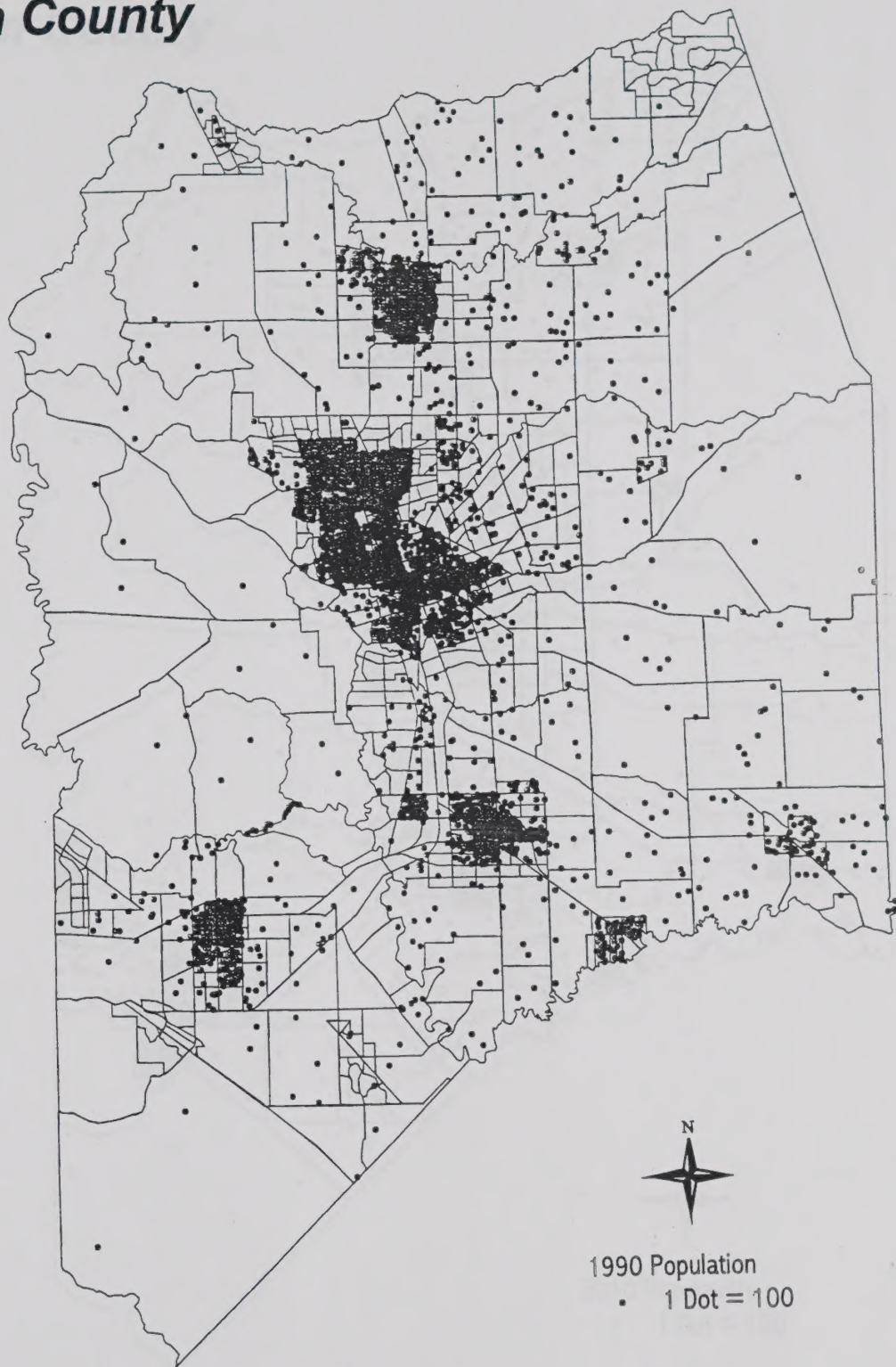
70 % Stockton Area, 13 % Misc. Unincorporated Areas, 6 % Tracy Area, 4 % Manteca, 3 % Lodi, 4 % Outside San Joaquin Co.

6. Please identify physical constraints and/or problem locations for bicycling and the nature of the problem.

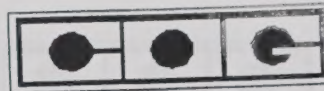
See Figure 2

Notes: * Total responses add up to more than 141 because respondents were allowed to select more than one type of bicyclist.

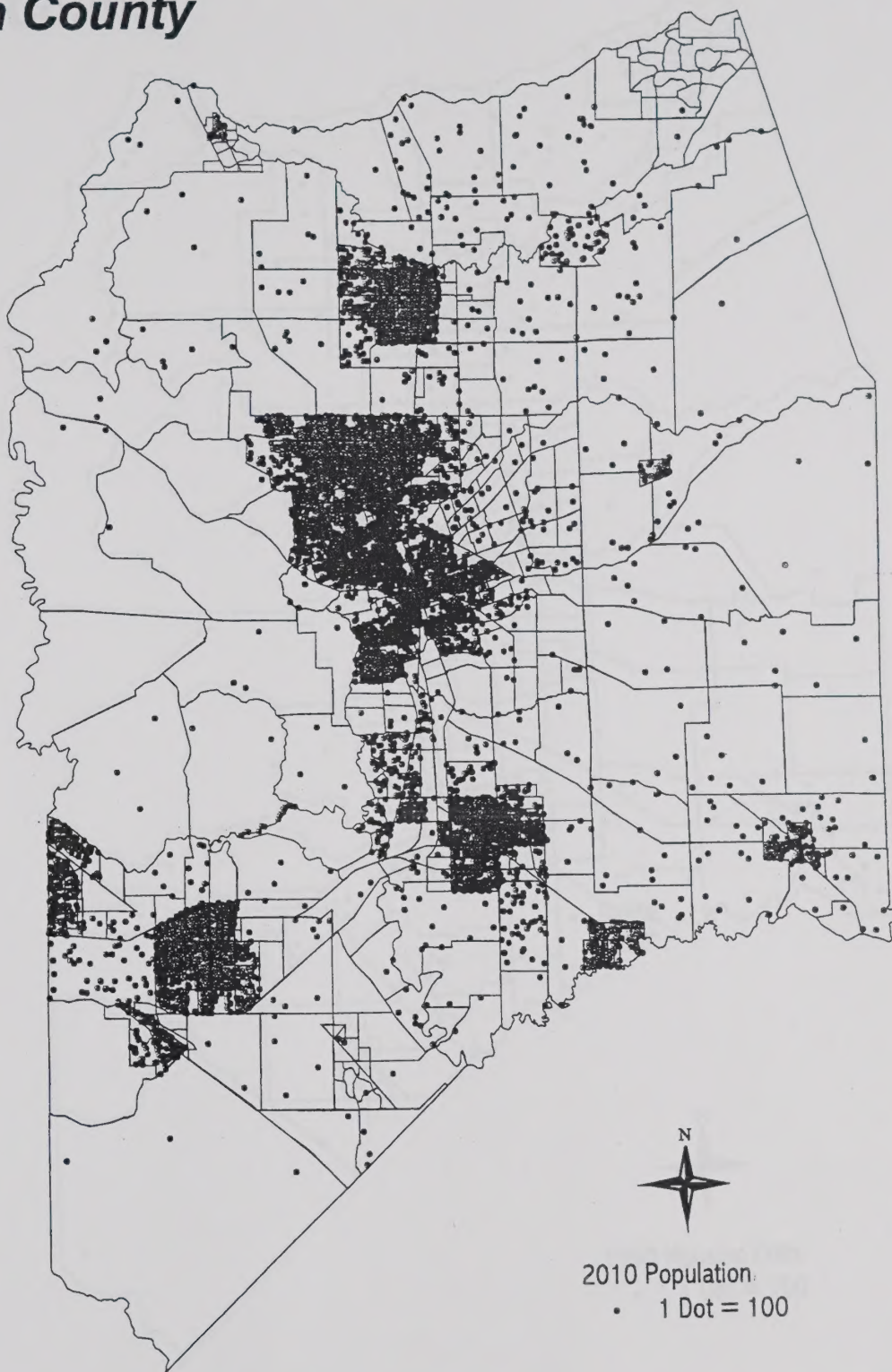
1990 Population San Joaquin County



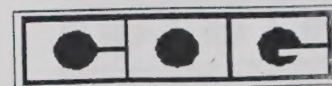
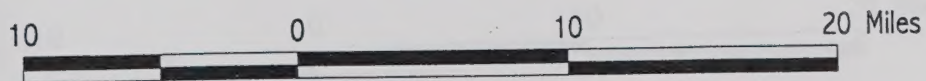
1990 Population
• 1 Dot = 100



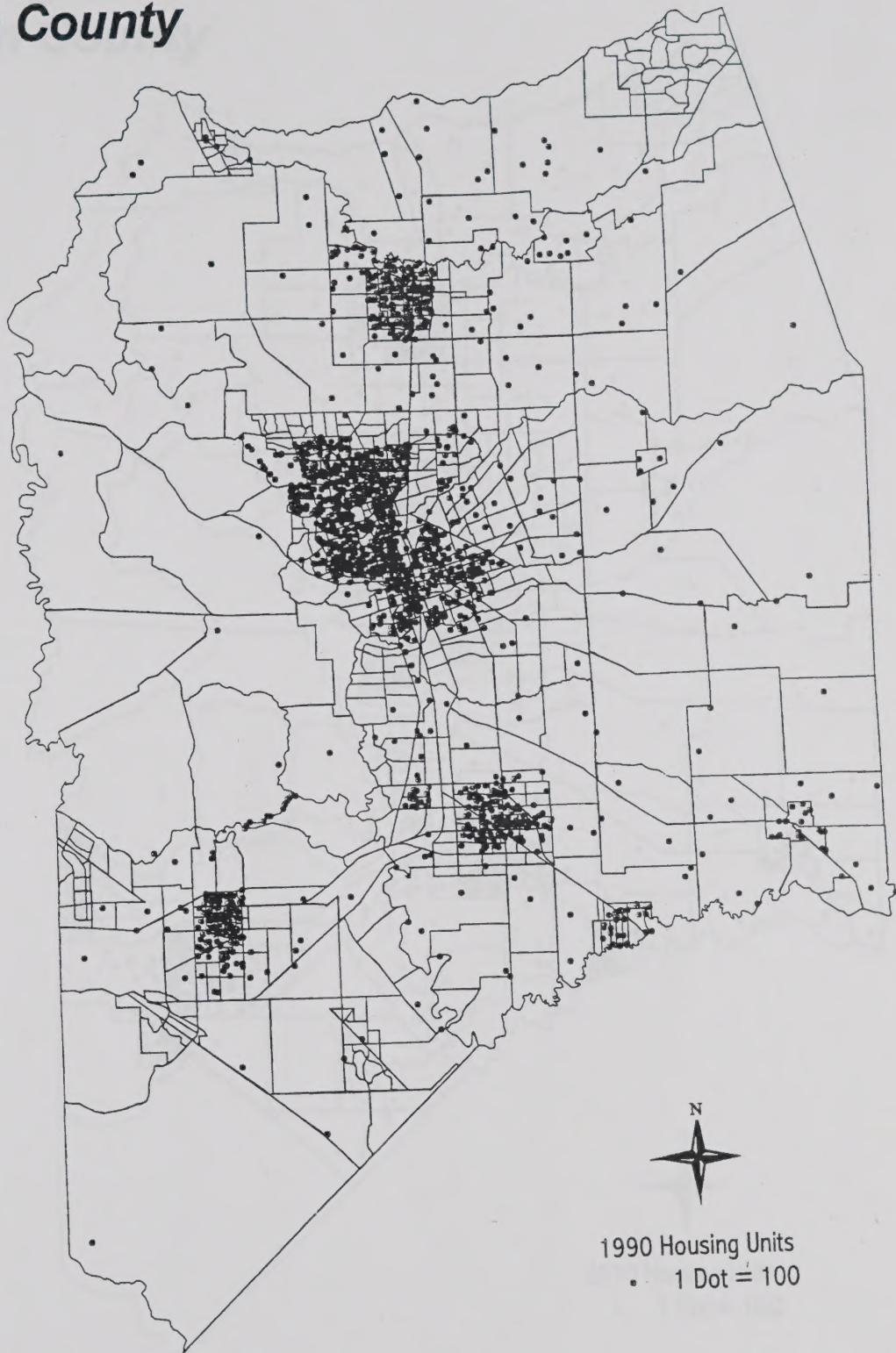
2010 Population San Joaquin County



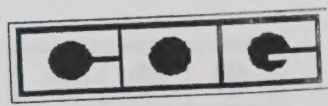
2010 Population
• 1 Dot = 100



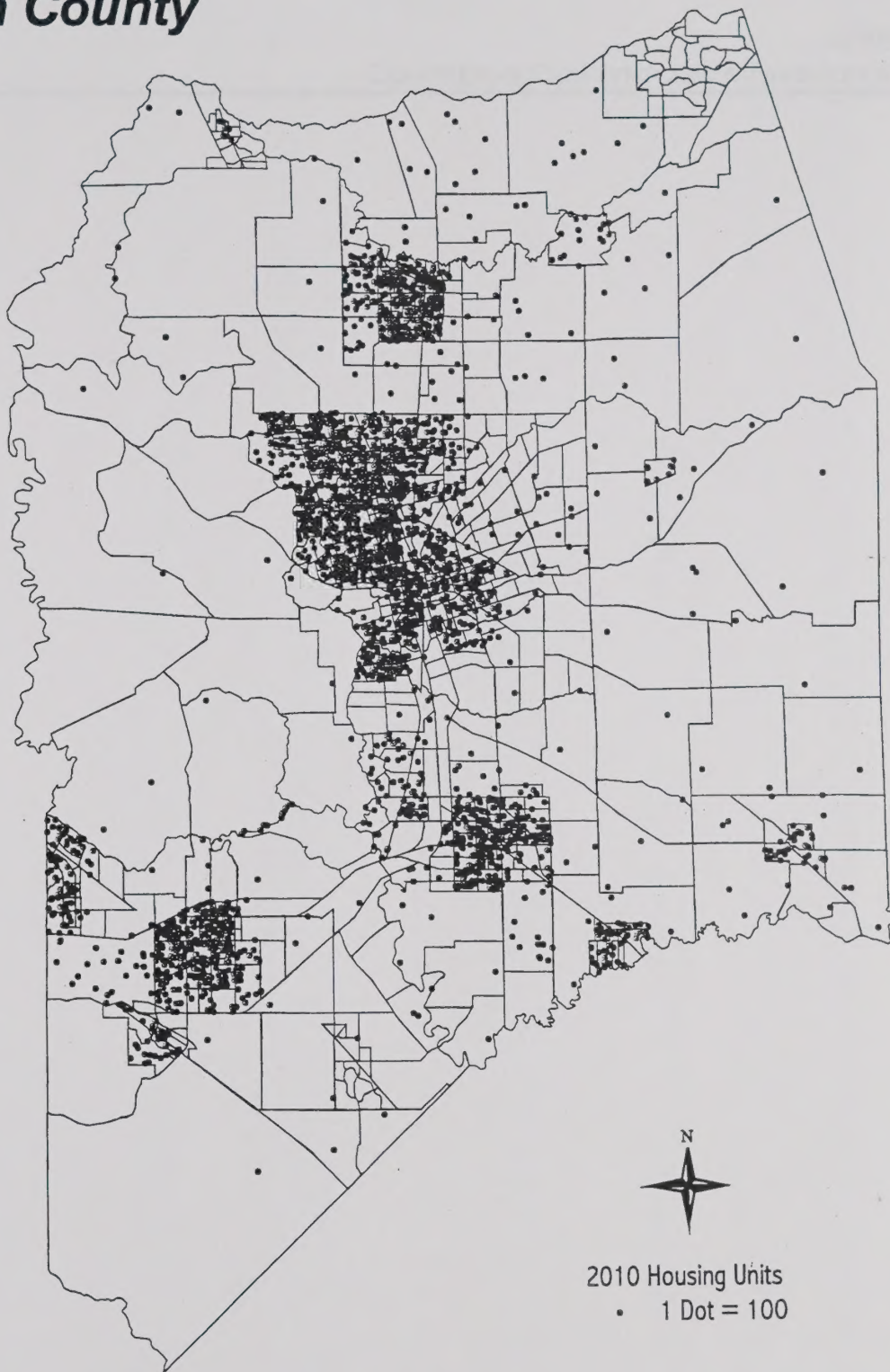
1990 Housing Units San Joaquin County



1990 Housing Units
• 1 Dot = 100

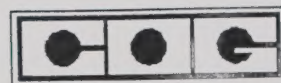


2010 Housing Units San Joaquin County

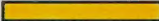
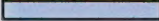


2010 Housing Units
• 1 Dot = 100

10 0 10 20 Miles



APPENDIX C UNINCORPORATED SAN JOAQUIN COUNTY BIKE PLAN CONCEPTUAL CONSTRUCTION COST ESTIMATES							
ROAD NAME	FROM	TO	LENGTH (miles)	ROADWAY TYPE	BIKEWAY CLASS*	CONSTRUCTION COST PER MILE	TOTAL COST
AIRPORT WAY	DURHAM FERRY RD	TRAHERN RD	3.7	MINOR	CLASS III	\$40,000	\$148,000
AIRPORT WAY	WEST RIPON RD	TRAHERN RD	2.7	MINOR	CLASS III	\$40,000	\$108,000
ARMSTRONG RD	MICKE GROVE RD	FRONTAGE RD	0.7	MAJOR	CLASS III	\$300,000	\$210,000
ARMSTRONG RD	WEST LANE	MICKE GROVE RD	0.3	MAJOR	CLASS III	\$300,000	\$90,000
ARMSTRONG RD	DAVIS RD	WEST LN	3.0	MAJOR	CLASS III	\$300,000	\$900,000
ARMSTRONG RD*	DeVRIES RD	SR99 EAST FRONTAGE RD	1.0	MAJOR	CLASS III	\$500,000	\$500,000
AUSTIN RD	STANISLAUS RIVER	WEST RIPON RD	2.0	MAJOR	CLASS III	\$300,000	\$600,000
AUSTIN RD	FRENCH CAMP ROAD	LOUISE AVENUE	2.3	MODERATE	CLASS III	\$300,000	\$675,000
BLOSSOM RD	WALNUT GROVE RD	PELTIER RD	2.2	MODERATE	CLASS III	\$150,000	\$330,000
BYRON RD	DEVELOPER	GRANT LINE RD	2.4	MINOR	CLASS III	\$40,000	\$96,000
CARLIN RD	CROCKER RD	ROBERTS RD	1.6	MAJOR	CLASS III	\$300,000	\$480,000
CHRISMAN RD*	DURHAM FERRY RD	CA AQUEDUCT	1.6	MODERATE	CLASS III	\$300,000	\$480,000
CHRISMAN RD*	TRACY	DURHAM FERRY RD	3.0	MINOR	CLASS III	\$50,000	\$150,000
COLLIER RD	LINN RD	MACKVILLE RD	1.1	MAJOR	CLASS III	\$300,000	\$330,000
COLLIER RD	ELLIOT RD	LINN RD	3.5	MAJOR	CLASS III	\$300,000	\$1,050,000
COLLIER RD	LOWER SACRAMENTO RD	ELLIOT RD	6.5	MAJOR	CLASS III	\$300,000	\$1,950,000
COPPEROPOLIS RD	MILTON RD	ESCALON-BALOTA RD	5.2	MAJOR	CLASS III	\$300,000	\$1,560,000
CORRAL HOLLOW RD	TRACY	LAMMERS RD	2.2	MAJOR	CLASS III	\$300,000	\$660,000
CORRAL HOLLOW RD	ALAMEDA COUNTY	CA AQUEDUCT	7.8	MAJOR	CLASS III	\$300,000	\$2,340,000
CROCKER RD	UNDINE RD	CARLIN RD	2.1	MAJOR	CLASS III	\$300,000	\$630,000
DAVIS RD*	TURNER RD	HWY 12	2.1	MAJOR	CLASS III	\$300,000	\$630,000
DODDS RD	ESCALON-BELLOTA RD	VAN ALLEN RD	3.0	MAJOR	CLASS III	\$300,000	\$900,000
DODDS RD	STANISLAUS COUNTY	ESCALON-BALOTA RD	4.0	MAJOR	CLASS III	\$300,000	\$1,200,000
DOS REIS RD	MANTHEW RD	DOS REIS STAGING AREA	1.4	MAJOR	CLASS III	\$300,000	\$420,000
DUNCAN RD	MILTON RD	EIGHT MILE RD	5.3	MAJOR	CLASS III	\$300,000	\$1,590,000
DURHAM FERRY RD*	CHRISMAN RD	AIRPORT WAY	6.5	MAJOR	CLASS III	\$500,000	\$3,250,000
EIGHT MILE RD	STOCKTON	STOCKTON	0.5	MINOR	CLASS III	\$40,000	\$20,000
EIGHT MILE RD	MICKE GROVE RD	FRONTAGE RD	0.8	MINOR	CLASS III	\$40,000	\$32,000
EIGHT MILE RD	JACK TONE RD	DUNCAN RD	2.7	MINOR	CLASS III	\$40,000	\$108,000
ELLIOT RD	COLLIER RD	HWY 12	4.3	MAJOR	CLASS III	\$300,000	\$1,290,000
ESCALON-BELLOTA RD	MILTON RD	HWY 4	4.0	MAJOR	CLASS III	\$300,000	\$1,200,000
ESCALON-BELLOTA RD	DODDS RD	ESCALON-BALOTA RD	3.4	MAJOR	CLASS III	\$300,000	\$1,020,000
ESCALON-BELLOTA RD	HWY 4	DODDS RD	5.0	MINOR	CLASS III	\$40,000	\$200,000
GRAND LINE RD	BYRON RD	TRACY BLVD	0.4	MAJOR	CLASS III	\$300,000	\$120,000
HANSEN RD	VON SOSTEN RD	SCHULTE RD	1.9	MAJOR	CLASS III	\$300,000	\$570,000
HARNEY LN	TULLY RD	TULLY RD	0.5	MAJOR	CLASS III	\$300,000	\$150,000
HOWARD RD	ROBERTS RD	WOLFE RD	2.2	MINOR	CLASS III	\$40,000	\$88,000
HOWARD RD	TRACY BLVD	UNDINE RD	2.2	MINOR	CLASS III	\$40,000	\$88,000
JAHANT RD	LINN RD	MACKVILLE RD	0.7	MAJOR	CLASS III	\$300,000	\$210,000
KILE RD	THORNTON RD	RAY RD	3.2	MAJOR	CLASS III	\$300,000	\$960,000
LAMMERS RD	CORRAL HOLLOW RD	TRACY BLVD	0.3	MAJOR	CLASS III	\$300,000	\$90,000
LIBERTY RD	HWY 88	AMADOR COUNTY	2.9	MAJOR	CLASS III	\$300,000	\$870,000
LIBERTY RD	MACKVILLE RD	HWY 88	2.1	MAJOR	CLASS III	\$300,000	\$630,000
LINN RD	COLLIER RD	JAHANT RD	0.7	MAJOR	CLASS III	\$300,000	\$210,000
LINN RD	COLLIER RD	COLLIER RD	0.3	MAJOR	CLASS III	\$300,000	\$90,000
LIVE OAK RD	JACK TONE RD	TULLY RD	1.5	MAJOR	CLASS III	\$300,000	\$450,000
LIVE OAK RD	HWY 88	JACK TONE RD	1.8	MAJOR	CLASS III	\$300,000	\$540,000
LIVE OAK RD	FRONTAGE RD	HWY 88	4.0	MAJOR	CLASS III	\$300,000	\$1,200,000
LONE TREE RD	VAN ALLEN RD	FRENCH CAMP RD	5.0	MAJOR	CLASS III	\$300,000	\$1,500,000
LOUISE AVENUE	AUSTIN ROAD	JACK TONE ROAD	2.0	MODERATE	CLASS III	\$300,000	\$600,000
LOWER SACRAMENTO RD*	HARNEY LN	EIGHT MILE RD	2.1	MODERATE	CLASS III	\$150,000	\$315,000
MACKVILLE RD	COLLIER RD	LIBERTY RD	1.5	MAJOR	CLASS III	\$300,000	\$450,000
MACKVILLE RD	COLLIER RD	HWY 12	1.8	MAJOR	CLASS III	\$300,000	\$540,000
MATHEWS RD	WOLF RD	MANTHEY ST	1.2	MINOR	CLASS III	\$40,000	\$48,000
MILGEO AVE	RIPON	MURPHY RD	0.4	MAJOR	CLASS III	\$300,000	\$120,000
MURPHY RD	MILEGRO RD	FRENCH CAMP RD	4.1	MAJOR	CLASS III	\$300,000	\$1,230,000
PATTERSON PASS RD	ALAMEDA COUNTY	SCHULTE RD	1.8	MAJOR	CLASS III	\$300,000	\$540,000
PELTIER RD	BLOSSOM RD	THORNTON RD	2.1	MAJOR	CLASS III	\$300,000	\$630,000
RAY RD	PELTIER RD	WOODBRIDGE RD	2.0	MAJOR	CLASS III	\$300,000	\$600,000
RIVER RD	MCHENRY AVE	SANTE FE RD	2.6	MINOR	CLASS III	\$40,000	\$104,000
ROBERTS RD	CARLIN RD	HOWARD RD	0.9	MAJOR	CLASS III	\$300,000	\$270,000
ROTH RD	MANTHEY ST	AIRPORT WAY	1.5	MAJOR	CLASS III	\$300,000	\$450,000
SR99 FRONTAGE RD	HARNEY LN	WILSON WAY	6.5	MAJOR	CLASS III	\$300,000	\$1,950,000
THORNTON RD	SACRAMENTO COUNTY	WALNUT GROVE RD	2.2	MODERATE	CLASS III	\$150,000	\$330,000
THORNTON RD	PELTIER RD	WOODBRIDGE RD	2.0	MODERATE	CLASS III	\$150,000	\$300,000
THORNTON RD	KILE RD	PELTIER RD	2.1	MODERATE	CLASS III	\$150,000	\$315,000
THORNTON RD	WALNUT GROVE RD	KILE RD	1.0	MODERATE	CLASS III	\$150,000	\$150,000
THORNTON RD*	DeVRIES RD	EIGHT MILE RD	1.1	MINOR	CLASS III	\$50,000	\$55,000
TRACY BLVD*	HOWARD RD	LAMMERS RD	4.2	MINOR	CLASS III	\$50,000	\$210,000
TULLY RD	HWY 12	BRANDT RD	1.4	MAJOR	CLASS III	\$300,000	\$420,000
TULLY RD	HARNEY LN	LIVE OAK RD	1.5	MAJOR	CLASS III	\$300,000	\$450,000
TULLY RD	BRANDT RD	HARNEY LN	3.1	MAJOR	CLASS III	\$300,000	\$930,000
TULLY RD	LIVE OAK RD	EIGHT MILE RD	1.5	MAJOR	CLASS III	\$300,000	\$450,000
UNDINE RD	HOWARD RD	CROCKER RD	2.9	MAJOR	CLASS III	\$300,000	\$870,000
VAN ALLEN RD	DODDS RD	LONE TREE RD	2.0	MAJOR	CLASS III	\$300,000	\$600,000
VON SOSTEN RD	BYRON RD	PATTERSON PASS RD	2.9	MAJOR	CLASS III	\$300,000	\$870,000
WALNUT GROVE RD	BLOSSOM RD	THORNTON RD	1.0	MAJOR	CLASS III	\$300,000	\$300,000
WALNUT GROVE RD	CONTRA COSTA COUNTY	BLOSSOM RD	3.4	MINOR	CLASS III	\$40,000	\$136,000
WEST LN	LODI	ARMSTRONG RD	0.9	MINOR	CLASS III	\$40,000	\$36,000
WEST LN	EIGHT MILE RD	ARMSTRONG RD	2.4	MINOR	CLASS III	\$40,000	\$96,000
WOLFE RD	HOWARD RD	MATHEWS RD	0.3	MINOR	CLASS III	\$40,000	\$12,000
WOODBRIDGE RD	DAVIS RD	LOWER SACRAMENTO RD	1.9	MAJOR	CLASS III	\$300,000	\$570,000
WOODBRIDGE RD	RAY RD	DAVIS RD	2.3	MAJOR	CLASS III	\$300,000	\$690,000
WOODBRIDGE RD	THORNTON RD	RAY RD	1.2	MAJOR	CLASS III	\$300,000	\$360,000
Subtotal			199.4			Subtotal	\$48,910,000
MICKE GROVE RD	ARMSTRONG RD	EIGHT MILE RD	2.0	MAJOR	CLASS II	\$500,000	\$1,000,000
ODELL AVE	DOWNING ST	S/O HORTON AVE	0.2	MINOR	CLASS II	\$50,000	\$10,000
Subtotal			2.2			Subtotal	\$1,010,000
TOTAL BIKEWAY MILES			201.6	TOTAL SYSTEM COST		\$49,920,000	

 Proposed Class III
 Proposed Class II

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